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Measuring Maternal Worth:
Racial Science in Mexican Obstetrics, 1869-1936

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Measuring Maternal Worth:
Racial Science in Mexican Obstetrics, 1869-1936

by

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Dedicated to my daughter Graciela: for brightening my life with love and joy, and for spending endless evenings watching Scooby-Doo. I hope it is all worth it someday.

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Abstract

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In his 1931 dissertation, medical student Gustavo Aldolfo Trangay proposed the implementation of a eugenic sterilization campaign in Mexico. He even reported performing clandestine sterilizations in public clinics, despite federal laws that prohibited doctors from doing so. Trangay reasoned that his patients were unfit for parenthood, and he claimed that their small pelvic cavities were a sign of biological inferiority. His focus on anatomical measurements- and especially pelvic measurements- was not novel in Mexican medicine. In the late nineteenth century, Mexican scientists became fixated on pelvic structure as an indicator of racial difference and hereditary worth. Thus social prejudices influenced Mexican medical practices for decades before the 1930s, and in his proposal, Trangay spoke to this legacy as well as to the international rise of eugenics.

This thesis explores the connections between scientific politics and maternal healthcare in Mexico between 1869 and 1936. In sum, I propose that scientific and elite

debate about female biology and reproduction was related to broader national concerns about race, gender, modernity and national identity. I therefore look at the production of scientific knowledge as a social project, and one that is not easily separated from political endeavors and nation-state formation.

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Introduction

"The woman," wrote Gustavo Adolfo Trangay, a student of Obstetrics at the Universidad Nacional Autónoma de México (UNAM), belonged to "a humble class and lived in pathologically deplorable conditions." In 1931, Trangay was completing his practicum at a public hospital in Mexico City, where impoverished women sought free health care during labor and birth. The patient, he claimed, "could not possibly attempt a spontaneous birth due to her excessively small pelvic measurements," and consequently, "abdominal cesarean was the only consideration." After the operation, "before closing her uterus, in the most natural of manners and with the understanding that the other doctors present were to remain silent, we proceeded to tie her tubes. It was a true professional sacrament, as plenty could be said about why Mother Nature permitted a vital organ to such a miserable life".[1]

By 1931, the Mexican federal government strictly prohibited doctors from performing sterilizations, so how could Trangay justify his illegal actions, and why would he use sacramental terminology to do so?[2] Answering this question requires us to describe the trajectory of scientific politics in Mexican medicine, hence this thesis tracks obstetrical practice from the late nineteenth century through the post-revolutionary 1930s. The study will first show that the Porfirian medical establishment believed Mexican indigenous women to be characterized by faulty reproductive anatomy, and that scientists sought to prove their hypothesis by performing comparative biological measurements

[1] Gustavo Adolfo Trangay, *La maternidad consciente y la clínica* (Mexico City: n.p 1931), 24.
[2] Nancy Leys Stepan, *The Hour of Eugenics: Race, Gender and Nation in Latin America,* (New York: Cornell University Press, 1996), 132.

(biometrics) in public hospitals. By the 1880s, the medical establishment concluded that the size of a woman's pelvic cavity provided an empirical measurement of her procreative ability and her racial worth. For this reason, doctors placed great emphasis on a science known as *pelvimetría comparada* (comparative pelvic measurements, or pelvimetry).[3] Additionally, this study illuminates how Porfirian prejudices influenced obstetrical practice and, consequently, the manner in which common women experienced medical treatment in public clinics.

Not only did the state-sanctioned rise of scientific politics affect clinical procedures and elite attitudes during the Porfiriato, but it continued to do so for decades afterwards. This work concludes that racialized medical endeavors and gendered surgical interventions, far from disappearing, gained strength in the face of Mexico's twentieth century revolution.[4] While the political and ideological distinctions between the Porfirian and post-revolutionary periods have long been embedded in the historiography of Mexico, this study spans the two eras in order to highlight points of continuity in the nation's medical practice and scientific discourse.

Porfirians largely subscribed to positivist attempts to categorize human worth, and pelvimetry became a national project because doctors and scientists theorized that

[3] "Porfirian" refers to the era in Mexico between 1876 and 1911, in which Porfirio Díaz controlled the nation. He was the president during that period, except between 1880 and 1884.

[4] The twentieth century revolution, which overthrew Porfirio Díaz's dictatorship, occurred between 1911 and 1919. The country's first revolution started in 1810 in order to assert independence from Spain. The term "post-revolutionary" refers to the decades after the 1911 revolution. Generally, the post-revolutionary period is portrayed as ending in 1940.

biological weakness posed a threat to modern progress.[5] A main theme in this work, therefore, is that Porfirian and post-revolutionary institutions approached the female body as a place where they could both conceptualize racial difference and exert control over the biological make-up of the nation. Indeed, archival sources indicate that Porfirian doctors viewed pelvimetry as significant to modernization and state medicalization. And yet, unlike phrenology- the classic Porfirian medical science- pelvimetry has been the subject of very little scholarly attention, if any at all.

The medical establishment viewed pelvimetry as a tool to delineate racial categories and investigate the effects of miscegenation, which were two endeavors that had broad implications for the state. Francisco Flores y Troncoso articulated this concept in 1888, when he authored a textbook for the *Escuela Nacional Pública* (ENP) entitled *La Historia de Medicina en México (The History of Medicine in Mexico).* In it, Flores y Troncoso offered the following suggestion to medical students:

> We must study the indigenous pelvis, because in its structure we find the key to modifications that we have observed in our race (*nuestra raza*). And we should call attention to this fact: by identifying the characteristics that are more accentuated in the indigenous pelvis, we can and should take advantage of the opportunity to differentiate both races (*ambas razas*).[6]

Professors and medical students alike acted upon Flores y Troncoso's call to inspect indigenous and *mestiza* bodies, and this thesis traces their work. In the process, it illustrates that Porfirian doctors endorsed a set of ideological and clinical traditions based

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[5] Of course, as this work demonstrates, the terms "indigenous" and "mestizo" are problematic and not easy to define. *Indigena/o* (indigenous) refers loosely to someone who identified with an indigenous group or who was perceived as indigenous. M*estizo/a* means "mixed," and in this context it generally refers to someone of mixed indigenous, European, and African descent.

[6] Francisco Flores y Troncoso, *Historia de la medicina en México. Tomo III,* (Mexico City: Oficina de Tipografía de la Secretaría de Fomento, 1888), 578.

on elite anxieties about race, gender, and reproduction in the modernizing nation. This study employs the term "racial science" to refer to the creation of scientific theories that were rooted in racialized theories of human difference, and it looks closely at obstetrical practice for four reasons.[7]

First, women's health was the first medical specialization in Mexico, which made it an object of special interest and extensive research.[8] Second, through the end of the nineteenth century and into the twentieth, obstetrics continued to be a focal point in Mexican science, and the state utilized scientific knowledge in their attempts to construct women and children as political, biological, and economic resources. Third, examining obstetrical practice points specifically to how scientific categories were applied to women, and, fourth, in a study of Mexico the topic presents the opportunity to examine the complex interplay of race and gender dynamics.

HISTORIOGRAPHY

Over the course of his 35-year dictatorship, Porfirio Díaz imposed a modernization project in Mexico.[9] For example, he mandated the construction of national infrastructure and an extensive series of railroads, encouraged foreign investment and European immigration, and forged an alliance with a group of scientists who played a

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[7] My use of the term racial science has been influenced by: Gavin Schaffer, *Racial Science and British Society, 1930-62* (New York: Palgrave Macmillan, 2008).

[8] Women's health and obstetrics were actually one of the first medical specializations internationally as well as in México. See Ornella Moscucci, *The Science of Women: Gynaecology and Gender in England, 1800-1929*, (London: Cambridge University Press, 1990).

[9] Except between 1880-1884, when he was not president.

major role in transforming higher education, government, and political structures. Scientific politics and positivism are the themes underlying much scholarly work on the Porfiriato because Díaz fashioned them as pillars of his regime. Positivism refers to a political emphasis on empirical analysis and a broad faith in scientific solutions to social problems, and scientific politics denotes the implementation of scientific truth- and no other- in the political domain.

Elite advocates of scientific politics in Mexico were known as *los científicos,* (the scientists) and they eventually gained the title *la escuela científica* (the scientific school of thought) or *el partido científico* (the scientific party).[10] In his work on Díaz's dictatorship, Charles Hale has shown that *los científicos* wished to place themselves at the core of the modern Mexican elite, and by the 1890s they were able to occupy the political offices they had long sought. *Los científicos* believed that political regimes correlated with stages of human evolution and that Mexico, as a matter of positivistic fact, required a strong state to impose modernization on degenerate communities in order for democracy to function. Subsequently, and to bolster political projects, elites used positivist science to stratify human groups. For example, Robert Buffington has described how nineteenth and twentieth century criminologists and anthropologists employed positivist phrenology in Mexico: "In their study of the skulls of indigenous criminals,"

[10] Charles Hale, *The Transformation of Mexican Liberalism,* (Princeton: Princeton University Press, 1990).

Porfirian doctors theorized that "small craniums, less developed occipital regions, and 'simple' sutures indicated inferiority."[11]

Drawing from the scientific data, politicians then utilized the rhetoric of social Darwinism in order to rationalize a racialized "war on crime" that targeted the nation's poor.[12] Behind the Porfirian façade of citizenship rights, therefore, scientific language "shaped and legitimized the more obvious (but *illegal*) exclusions of race and class".[13] In sum, Buffington has demonstrated that Porfirian elites used phrenology in order to construct a logic of biological difference which they could attribute to whole sectors of the population, thereby rationalizing their social marginalization and political disenfranchisement. [14]

State officials also theorized that "criminal" and "backward" populations endangered national capitalist development and the chances that Mexico would succeed in the global competition for national survival.[15] Alan Knight has pointed out that Porfirian modernization relied on the dispossession of peasant communities, the continuation of a colonial-type exploitation of labor, and the disruption of political autonomy in rural and indigenous communities.[16] Knight has shown that the Porfiriato

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[11] Robert Buffington, *Criminal and Citizen in Modern Mexico,* (Lincoln: University of Nebraska Press, 2000), 156.
[12] Buffington, 35; 36.
[13] Ibid., 4 (emphasis original).
[14] Ibid., 4.
[15] The competition for national survival was especially relevant due to the U.S. siege of approximately half of Mexican territory in 1848 with the treaty of Guadalupe Hidalgo, and the late-nineteenth century emphasis on Social Darwinism, modernization and industrial revolution.
[16] Alan Knight, "Racism, Revolution, and Indigenismo," in *The Idea of Race in Latin America*, *1870-1940*, ed. Richard Graham, (Austin: University of Texas Press, 1990), 15.

sponsored "a climate of racism that was both official… and, more important, unofficial (practiced by the regime's minions and by social elites more generally)".[17]

Knight reminds us that "race" is a socially constructed, malleable category, and that "even in respect to inherited somatic features 'Indian' and 'mestizo' people may be indistinguishable, individually or collectively".[18] The majority of social scientists concur with Knight's assertion that racial categories are socially, not biologically, defined.[19] For this reason, it is instructive to pursue historical analysis of scientific projects that have attempted to ascribe racial characteristics on to regional, ethnic, or national groups because, as Stephen Jay Gould has shown, subsequent elites have used scientific criteria to manipulate inconclusive data in support of prior conclusions about biological worth.[20]

A political revolution that started in 1911 overthrew Porfirio Díaz's dictatorship and aimed to restructure Mexican society, and notable public thinkers like Manuel Gamio advocated a racial ideology based on notions of the Mexican *mestizo*. By the 1930s, elites saw "dissolv[ing] the Indian element into the mestizo element" as "the necessary consequence of nation-building".[21] Accordingly, Knight has depicted an "*indigenista-mestizaje* cult," that believed in a "a guided, enlightened" process of indigenous enculturation, which would presumably preserve the "positive aspects of Indian culture" while erasing the negative ones.[22]

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[17] Ibid., 80.
[18] Ibid., 74.
[19] Omi, Michael and Howard Winant, *Racial Formation in the United States: From the 1960s to the 1990s*, (Rutledge: 1994).
[20] Stephen Jay Gould, *The Mismeasure of Man*, (New York: W.W. Norton, 1996).
[21] Knight, 85 (quoting Luis Cabrera); 86.
[22] Ibid., 86.

As this implies, many post-revolutionary elites promoted a racial discourse that rendered prejudice in a cultural language that was, on the surface, less deterministic than Porfirian hereditarianism. However, most post-revolutionary institutions were characterized by the overall continuity of Porfirian-style racism, and this study demonstrates that the medical establishment was one example. Indeed, Knight has argued that the majority of elites and politicians still adhered to "inescapable ascription(s)" regarding supposed racial characteristics and cultural pathologies. [23]

Post-revolutionary notions of cultural degeneracy were, according to Knight, merely the flip side of the same coin: a "formulation" that simultaneously "represent(s) breaks with, and advances on, strict biological racism".[24] Race was still mistaken as an "innate, biological" factor,[25] and Knight suggested that the continuation of racialized discourse "probably helped maintain both the notion of "race" and, to some degree, the practice of racism" in the post-revolutionary period.[26] This study seeks to build on Robert Buffington and Alan Knight's conclusions regarding continuities and ruptures in Porfirian and post-revolutionary racial politics. Furthermore, it fills a historiographical breach because it largely remains to be seen how state-sponsored scientific practices affected women's lives and the ways in which they experienced maternity.

The connections between positivism and gender have not only been overlooked in the historiography of Mexico, but rather on a global scale. In 1990 Ornella Moscucci

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[23] Ibid., 93.
[24] Ibid., 93, my emphasis.
[25] Ibid., 87.
[26] Ibid., 87.

wrote, "while craniometry has long attracted the interest of historians, the study of pelvimetry remains to date totally unexplored," a fact which has not changed in recent years. Moscucci continued, "craniometry was believed to be applicable to the classification of men," while "the European woman for her part was also thought to be more highly developed than her 'primitive' sister, but her superiority was indicated by the greater capacity of her pelvis".[27] On a broader scale, Moscucci has proposed that nineteenth century attempts to evaluate and classify human worth were intimately connected to social prejudices:

> During the course of the nineteenth century, the man/woman dichotomy developed relations with other oppositional pairs, notably the adult and the child, the normal and the pathological, civilization and savagery. Woman was classed with the child and the primitive, and both femininity and savagery were seen to be pathological states and an arrested stage of development of the human species. Categories of sex, race and age came to define the standards of social worth.[28]

As the creators of human capital, women have been vital national resources and actors with a degree of power over the future of nation-states. For this reason, as Hibba Abugideiri has illustrated, the "modern female body has been a rich problematic site of political struggles other than the woman's own".[29] In other words, the elite naturalization of biological motifs was tied to modern state-builders desire to exercise scientific control over the production of human capital. This political trend has been consistently

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[27] Ornella Muscucci, *The Science of Women*, 38.

[28] Ibid., 4.

[29] Hibba Abugideiri, *Gender and the Making of Modern Medicine in Colonial Egypt,* (Farnham: Ashgate, 2010),16.

reinforced on personal levels, because doctors and scientists have access to individual bodies and are thus able to make intimate interventions that politicians cannot.

In the history of Mexico, it has been instructive to examine medical thinking about reproduction during the momentous times of Porfirian and revolutionary state formation, especially given national debates about birth control and disease.[30] Katherine Bliss has provided an excellent overview of the post-revolutionary state's efforts to regulate and reform deviant sexual behavior in Mexico City.[31] "Sexuality" Bliss asserted, "became intimately associated with revolutionary ideology during the social reform and state consolidation that characterized the period after 1920".[32] The reasons behind this focus were numerous, but Bliss has argued that they included the international rise of reformism, revolutionary ideals about responsible parenthood, and concern about syphilis epidemics throughout the nation.[33]

Regarding prostitution and other social challenges for the fledgling state, Bliss presented a bold conclusion: that attempts to reform sexual behavior resulted in the state's assumption of "authority over the bodies and minds of the city's sexually active young women".[34] Beyond measures aimed at prostitutes, Bliss discussed broader social measures regarding reproduction, such as state and elite attacks on socially irresponsible

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30 Mary Kay Vaughan, *Cultural Politics in Revolution: Teachers, Peasants, and Schools in Mexico, 1930-1940,* (Tucson: University of Arizona Press, 1997).

31 Katherine Bliss, *Compromised Positions: Prostitution, Public Health, and Gender Politics in Post-Revolutionary Mexico,* (Pennsylvania University Press, 2002).

32 Bliss, *Compromised Positions*, 97.

33 Ibid., 133; 16.

34 Ibid.,106.

parenting and promiscuity in general.[35] Curiously, however, Bliss disregarded the racialized nature of the discourse she examined, even in her discussion of eugenics.

Although most historical accounts portray women as economic and political subjects, Bliss' influential work has shown the outcomes of social reform on women's intimate lives and sexual relations. This study pushes Bliss' line of inquiry further still by delving into the details of clinical practice, where the state endorsed scientific attempts to create the citizens and racial subjects it desired, and to discourage those it did not. By exploring medical efforts to transform and, in some circumstances, even eliminate women's reproductive lives, this study illuminates state and scientific efforts to reform public patients in very private ways.

SOURCES

As Nancy Stepan has proposed, medical archives can be an ideal place to explore the "imagined community" that scientists and doctors conceptualized for themselves and the nation. Apart from elite visions of the nation, I found that intimate histories have been surprisingly well documented in medical literature, which provides historical glimpses into lived experiences. I reviewed over 2,000 pages of medical textbooks from the Porfiriato, and I am thus familiar with broad developments that took place within the medical curriculum. In addition, I have developed a clear impression of how students interpreted their schooling by reading the dissertations they submitted upon graduation.

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[35] Ibid., 133.

Medical students produced 1,321 studies during the nineteenth century, and the vast majority of those were written during the Porfiriato. Of the total, 247 dissertations (19.6%) regarded obstetrics or gynecology.[36] I have examined over 70 of the Porfirian

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[36] Troconis Alcalá, *En los embarazos tiernos cuál es el mejor procedimiento operatorio para efectuar la desocupación de la matriz?,* (Mexico City: Luis. Impr. De Díaz de León, 1885); David Araujo y Calderon, *Metodos de agrandamiento de la pelvis,* **(**Mexico City: Imprenta Franco-Mexicana. SA la de la Academia, 10, 1923); Manuel Barreiro*, Oportunidad en la aplicación de forceps*, (Mexico City: Tip. De B. 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Primera Calle Ancha Número 12, 1884); Alejandro Aguilar, *Del conocimiento de la mujer embarazada, en los ultimo's meses de la preñez, como medio profiláctico de la distocia,* (Mexico City: Imprenta de Ignacio Escalante, bajos de San Agustín, Número 1, 1884); *Memorándum de la operación cesárea y amputación útero ovárica ejecutada por la primera vez en México por el doctor Júan María Rodríguez* (Mexico City: Imprenta de Ignacio Escalante Bajos de San Agustín, Número 1. 1884); *Inconvenientes y peligros que presenta la anteversion y anteflexion uterinas para el embarazo parto y pueperio,* (Mexico City: Imprenta

dissertations, or almost one third of the total for obstetrics and gynecology. I began reading the studies by selecting random samples, but I soon noticed that the vast majority of the medical literature referred to the Mexican "pelvic deficiency vice," as the principle source of a host of obstetrical problems. Hence I decided to focus on positivism in obstetrical practice because of its prominence in the archives, and pelvimetry emerged as a point of focus in my investigation. For this reason, I carefully read every study on pelvimetry produced between 1881 and 1936.

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de Francisco Díaz de Leon. 1884); Nicolas Franco, *El tacto vaginal durante el trabajo del parto,* (Mexico City: Imprenta A Cargo de Antonio Rosas, 1885); Jesus Garnica, *Contribución al estudio de la etererizacion por el recto,* (Mexico City: Imprenta Poliglota, 1885); Luis Alcántara y Cortés, *Estudio sobre la naturaleza de la ameno-desmenorrhea exfoliativa,* (Mexico City: Imprenta de Francisco Díaz de Leon, 1885); Júan Martínez del Campo, *Breves consideraciones sobre los estrechamientos del recto, principalmente bajo el punto de vista de su tratamiento,* (Mexico City: Tip y Lit de la Epoca, 1885); Jóse de J. Casteñeda, *Apuntes para el estudio de la cloroformización,* (Mexico City: Talleres de la Escuela Nacional de Artes y Oficios, 1885); Francisco Alvarez, *Breve estudio de un nuevo procedimiento para la curación radical de la caída del útero,* (Mexico City: Tip. Berrueco Hermanos, Primera Calle Ancha Número 12, 1885); Manuel Narro, *Breve estudio sobre la hemmorraghia puerperal,* (Mexico City: Imprenta de Francisco Díaz de Leon. 1886); Alberto Gomez Romero, *Breve estudio sobre las ventajas del método antiséptico en su aplicación al embarazo y al parto,* (Mexico City: Imprenta de Francisco Díaz de Leon, 1886); *Cuatro laparotomías por Ricardo Fuertes,* (Mexico City: Imprenta de Guillermo Veraza, Calle de la Canda, número 6 ¼. 1886); Samuel García, *Tratamiento de la eclampsia puerperal,* (Mexico City: Oficina Tip. De la Secretaría de Fomento, 1886); Juan Pujol y Grau, *Aspesis puerperal,* (Mexico City: Imprenta y Tipografía de Juan Flores, Calle de Cochero número 2, 1888); Alberto Guzman, *Algunas consideraciones sobre la profilaxia de la fiebre puerperal*, (Mexico City: Imprenta del Gobierno en el ex-arzobispado, 1888); Leon Malpica Soler, *Breve estudio de la esterilidad relacionada con la ovulacion,* (Mexico City: Imprenta de Alfonso E. Lopez, 1888); Ramon Estrada, *La falta de hygiene infantile en México, y sus relaciones con la degeneración de la raza,* (Mexico City: Imprenta de la escuela correcional, Ex-convento de San Pedro y San Pablo, 1888); Genardo Noris, *Apuntes sobre el tratamiento del doctor apostolic aplicado a la endometritis,* (Mexico City: Imprenta del Gobierno, en el ex-arzobispado, 1889); Manuel Barreiro*, Profilaxia de las enfermedades puerperales y proyecto de maternidad*, (Mexico City: Tipografía de E. Dublan y Comp. Refugio num 15, 1889); José Antonio de Echávarri, *El sulfato de cobre como antiséptico en obstetricia,* (Mexico City: Imprenta Moderna de Cárlos Paz, 1889); Julio M. Barrios, *Estudio sobre la hemorragias de la placenta y su tratamiento,* (Mexico City: Imprenta del gobierno en el ex-Arzobispado, 1889); Carlos Tejeda Guzman, *Consideraciones sobre algunos puntos de obstetricia,* (Mexico City: Imprenta de Francisco Díaz de León, Avenida Oriente 6, número 163, 1889); Fichteur, *Algo sobre la operación cesárea,* (Mexico City: Imprenta Epifanio de Orozco, 1889); Francisco Vazquéz Gómez, *Del enfermo en la intervención quirúrgica,* (Mexico City: Imprenta del Gobierno en el ex-Arzobispado, Avenida Oriente, número 726, 1889); José Gómez, *Apuntes sobre la fecundación,* (Mexico City: Imprenta y litografía de Júan Flores, Calle de cochero, número 9, 1889); Joaquin Cosio, *Algo sobre la patogenía y el tratamiento de la septicemia puerperal,* (Mexico City: Imprenta del Gobierno en el ex-Arzobispado, Avenida Oriente, número 726, 1890); Filogonio Alcántara, *Breves consideraciones del embarazo complicado del quisto ovárico,* (Mexico City: Imprenta del Gobierno en el ex-Arzobispado, Avenida Oriente, número 726, 1990); José de Jesús Sánchez Gómez, *Breve estudio sobre la pelvis,* (Mexico City: Oficina de tipografía de la secretaría de fomento, Calle de San Andres número 13, 1891).

Higher education plummeted in the early twentieth-century as Díaz slid from power, revolution swept the country, and reconstruction enveloped the nation. In consequence, fewer obstetrical studies were published after the revolution than during the Porfiriato. Nevertheless, the post-revolutionary works that did appear were much longer than the nineteenth-century pieces. I have examined approximately 15 twentieth century works, which represents a sizeable sample of the post-revolutionary obstetrical literature.

Because I am interested in tracking change and continuity in scientific politics, I focused on biometrics in the post-revolutionary era just as I did for the Porfirian literature. In other words, for the sake of methodological consistency, I charted pelvimetry during the Porfiriato and pelvimetry in the post-revolutionary period. The specificity of my investigation into obstetrical practice was fruitful, because Trangay's dissertation provides evidence that forced sterilization did, in fact, occur in Mexico.[37]

Historical inquiry is one way of investigating the manner in which doctors and scientists have wielded their professional power in pursuit of social projects. For this reason, I believe that a body of medical student research can be a rich set of sources. The students wrote specifically for the medical community, and it is clear that a discourse emerged from their work. In addition, student writings displayed a high level of familiarity with their audience. After hours of classroom debate, they were not afraid of offending their readers because they were familiar with the political and ideological tendencies of the institution. In some ways, I have found that reading student

[37] Several articles and chapters have been published on the topic of eugenics in Mexico. However, I am not aware of an academic piece that exposes proof of forced sterilization in Mexico, and I have not seen Trangay's dissertation cited elsewhere.

dissertations is akin to reading personal letters exchanged between elites (albeit extensive, formal, and highly technical letters).

Although the above factors made the information rich, the set of sources has presented challenges as well. First, doctors often referred to medical procedures in a way that privileged anatomical pieces over the human whole. For example, doctors wrote "the uterus in question" or "the great majority of pelvises in Mexico," but who were the women attached to the body parts? My most difficult task has been to look past dramatic discourse and view hospital patients as the historical actors that they were. Therefore, a central question of mine has been: "how did scientific politics in medical practice affect common people's lives?"

To echo Nancy Stepan again, it would be difficult to read the dissertations that I did without recognizing that Mexican doctors learned and produced a great deal of scientific knowledge.[38] In other words, they were not merely receptacles of European scientific practice and ideology, but rather they conducted their own investigations and crafted their own theories. They took particular pride in their obstetrical research, not only because they thought that the majority of Mexican women were anatomically deficient, but also because they sought to become global leaders in producing obstetrical knowledge and perfecting new practices. On a last note, I do not intend to reify stereotypes of Mexican *machismo* or convey that Mexican obstetrical practices were more aggressive or patriarchal than elsewhere in the global scene.

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[38] Stepan, *The Hour of Eugenics*, 1996.

ORGANIZATION OF CHAPTERS

This thesis divides into three chapters. The first chapter outlines the demographic information on female patients who received medical treatment in Mexico City's public hospitals during the Porfiriato. Beginning with a discussion of hospital space, it explores the state segregation of patients by socio-economic class. The chapter also investigates the ways in which doctors categorized their patients, and tracks how scientific attitudes regarding women's worth shifted over the course of the Porfiriato. In sum, chapter one charts the emergence of a discourse of scientific difference in Mexico's clinics, and explores ways to document the development of prejudice.

Chapter two examines medical procedures performed in Mexico City's public clinics. As scientific politics and positivism rapidly altered higher education during the Porfiriato, doctors and scientists increased their efforts to determine the biological make-up of the nation. This chapter thus locates elite anxieties about race in debates about controversial medical practices such as the application of chloroform, the use of forceps and the performance of anatomical measurements. By tracing ideological shifts in thought about the biology of Mexican women over the course of the Porfiriato, it also illuminates ways in which scientific politics influenced public health practices.

Chapter three highlights the post-revolutionary legacy of Porfirian modernization, scientific discourse and state medicalization. First it examines a quantitative study from the General Hospital in Mexico City, showing that doctors sterilized a striking number of women who were diagnosed with "backward" and "primitive" uterine and pelvic structures. The middle of chapter three discusses Gustavo Adolfo Trangay's proposal for

eugenic sterilization in rural Mexico, and the conclusion points to the duration of the Porfirian influence on clinical practice and scientific politics in Mexico.

Chapter 1:
Women, Virtue, and Beauty in Porfirian Medicine

In November 1906, *El Imparcial* published a newspaper article that pointed to a scientific fascination with beauty and stressed the application of scientific selection to Mexico. The piece, entitled "A Beautiful Community," described a social experiment in late nineteenth-century Russia. Dr. Rachalalkoff, a eugenicist and property owner from Moscow, "gathered the most beautiful peasants he could find, and provided them with houses and a plot of land in the same town." The scientist was fascinated by reproduction between beautiful people, and so he researched bone structure and physique in order to define biological perfection.[39]


UNA COLONIA DE LA BELLEZA

Mujer

39 "Una Colonia de Belleza," *El Imparcial*, November 23, 1906, 5.

Rachalalkoff reportedly had “a personal collection of skeletons from individuals from all the human races,” and with “bones from different skeletons, he assembled the perfect human form, which he hopes to eventually produce.” The scientist reportedly chose an English spine, a Japanese cranium, Danish shoulders, and the legs and feet of an American. Rachalalkoff also “dedicated his time to comparative studies of the diverse animal forms,” and made “drawings to represent the correlations between different animal species and human races”. “Our drawing,” reported the Mexican journalist, “is one of the most suggestive: it is the skeleton of an enlarged cat in the vertical position, which presents notable similarities”.

The journalist was clearly preoccupied that a Russian eugenicist would compare Mexicans to cats. Apart from the international slight, however, why did Rachalalkoff’s project interest the Porfirian press? By the beginning of the twentieth century, scientists believed that they could offer a modern, objective definition of beauty. At the core of elite anxieties regarding anatomy were preconceptions about the mental and moral defects of the hereditarily unfit. Scientists believed that people inherited behavioral characteristics like somatic traits, and the notion of physical appeal intertwined deeply with ideas about a human’s overall caliber.

The Mexican medical establishment eventually embraced the scientific discourse of beauty, and by the 1890s doctors in public clinics began classifying female patients as “ugly”, “average”, or “beautiful.” It is notable that the aesthetic meter of the 1890s differed from that of the beginning of the Porfiriato, when doctors deemed women “good,” “average,” or “bad”. In light of Porfirian medical classifications, Rachalalkoff’s

project appeared to tap into domestic elite anxieties about Mexican anatomy by alluding to a utopian solution for reproducing desirability. Although filling the countryside with "beautiful" Mexicans may have been a distant dream for Porfirians, they apparently viewed the performance of aesthetic classification as a step towards identifying the pleasing portion of the population and observing their reproductive behavior.

This chapter explores this shift in medical discourse from the "good/bad" dichotomy to the "beautiful/ugly" one. It proposes that while early-Porfirian classifications still focused on moral and behavioral traits, scientists eventually connected a woman's value to their perception of her biological worth. Patient classification by the late-Porfiriato thus suggested that there was a much closer relationship between racial merit and feminine virtue. As a result, by the 1890s the medical establishment produced a scientific reassessment of Mexico City's working class females, and one that had dubious political implications.

This chapter divides into three sections. First it explores the maternity clinic in Mexico City (*La Casa de Maternidad,* henceforth referred to as *la Casa*), and focuses on the class structures that influenced how patients experienced their stay. Next, the chapter investigates how doctors categorized women during the Porfiriato by drawing on two sets of patient data.

A medical student named Manuel Esesarte published the first set of data along with his dissertation in 1882. His study was based on five years of research that he conducted in *La Casa* between 1877 and 1882. The second chart, from the year 1891, aimed to record the sexual behavior, class status, and occupation of young women.

Unlike the early-Porfirian records (from 1882), the 1891 data did not include an overview of the author's methodology or findings. Rather, hospital officials included it in a compilation entitled *Estadística del hospital Juárez* (Statistics from the Juárez Hospital).[40] Given their distinct origins, the records are too dissimilar to compare. Therefore, the analysis follows broad trends in scientific efforts to categorize women.

The two sets of data looked at a similar number of women (164 and 177 respectively), and they both aimed to record comparable information such as age, occupation, marital status, and type. Cross-tabulation analysis was performed in order to investigate the correlations between type, occupation, education, and marital status. The records proved to be rich archival sources, as they provided insight into the lives of working class women who the state viewed as deviant or problematic in some way. In the process they revealed provocative if subjective categorizations- and shifts in categorizations- that provided a glimpse into how scientific prejudices may have influenced the ways that doctors saw their patients. The shifts, furthermore, are important as they represent an index of broader attempts to discipline women by associating moral with biological or racial qualities in the interest of economic progress and state modernization.

HISTORIOGRAPHY

Historians have often conceptualized the study of women and gender in relation to themes such as class tensions, racial dynamics, and modernization. By analyzing late

[40] In the *Catalogo de tesis de medicina del siglo XIX*, under *Estadística del Hospital Juárez*.

Porfirian newspapers from the state of Chihuahua, William French has found that middle class and elite commentators viewed women's social activities as "an important means of class differentiation," and they encouraged gendered social mores as "a way to champion moral reform" in the modern urban setting.[41]

One opinion piece from 1906, for example, characterized the "most contemptible" woman as "the coquette," who exhibited vanity and lusted for luxury and material goods. Likewise, "the ugliest" was "she who always looked at herself in the mirror". Prostitutes attracted attention by wearing dramatic clothing and through non-conformity to gendered behavioral expectations. Thus, elites viewed them as the "unmistakable symbol of societal decadence, corruption, and loss of virtue".[42]

Concerned about loose morals in the urban setting, Porfirians attempted to equate feminine beauty with conventional behavior. In general, they defined attractive women as those who were humble and dedicated to their husbands, homes, and families. French found numerous examples of dichotomies meant to portray the "ideal woman- bad woman division," such as "simple-complicated, virtuous- degraded, open-deceptive, good-evil, and *sociedad culta-gente baja*," meaning "cultured society" vs. "the lower class".

French's sources emphasized that education, modesty, morality, and economic productivity could transform an average female into an "ideal woman".[43] Thus, middle

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41 William E. French, "Prostitutes and Guardian Angels: Women, Work, and the Family in Porfirian Mexico," *The Hispanic American Historical Review*, 72 (1992): 529.
42 French, "Prostitutes and Guardian Angels," 548.
43 Ibid., 550.

class and elite journalists in Chihuahua defined feminine appeal in relation to class status and the humble adherence to gender roles, but not necessarily in racial terms. Although the dichotomies French outlined carried class and racial connotations, they did not include explicit references to indigenous or rural communities. Of course, this was fitting given the context: Chihuahua was a dynamic, relatively miscegenated state, and public discourse about gender probably differed vastly with location.

According to French, the public desire to proscribe gender roles in Chihuahua shaped the social interpretation of beauty. With the increase of a "floating population" and women's employment in urban spaces, for example, some worried about the maintenance of "proper male and female roles in the conjugal home".[44] Several newspaper opinion pieces expressed the concern that women who appeared in public spaces would "virtually become men". Likewise, women who did not conform to gendered social roles were seen as "a violation of nature itself ".[45]

Late nineteenth century doctors, politicians and public thinkers also used overlapping scientific rationales to claim that a woman's "natural place" was in the private sphere. In her work on gynecology in nineteenth century Great Britain, for example, Ornella Moscucci has illustrated that the question of beauty correlated with the "relationship between women's biology and their social activities". "The penance," she found, "for contravening the 'natural' order of society was ugliness in mind and body".[46]

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[44] Ibid., 527; 550.
[45] Ibid., 552.
[46] Moscucci, *The Science of Women,* 40.

In fact, according to Moscucci, the study of gynecology "was not simply a question of learning what diseases peculiarly affected women: it was a matter of realizing that, because women were entirely finalised for the sexual functions, mind and body, their sexual physiology and pathology affected their behaviour, and thus had social and moral consequences".[47] Moscucci cited the British gynecologist Robert Barnes, who articulated this concept in 1882:

> The word 'Gynaecology'… embraces far more than is expressed in the term 'diseases of women'. In its full etymological meaning it is comprehensive beyond the strict domain of medicine… Without accepting the doctrine of Michelet, that the life of woman is a history of disease, it is undeniable that to appreciate justly the pathology of women we must observe her in all her social relations, study minutely her moral and intellectual characteristics- that we must, in short, never for a moment lose sight of the physical attributes which indelibly stamp her as a woman, which direct, control, and limit the exercise of her faculties. This collateral study is of infinitely more importance in the pathological history of woman than it is in that of man.[48]

In Mexico, Porfirian doctors agreed that it was necessary to scrutinize women's social and sexual relations in order to determine their moral traits, which allegedly influenced their biological, and even economic, functions. In fact, both sets of patient records in this essay point to Porfirian efforts to investigate women's personal lives, and many of their investigative efforts seemed to pivot on questions of class. Indeed, the maternity clinic where scientists conducted much of their research divided patients into public and private clients. The class divisions were not only racialized, but they also appeared to influence the type of medical attention that patrons were likely to receive.

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[47] Ibid., 31.
[48] Ibid., 30-31.

Thus, understanding the structure of *La Casa* provides insight into the state and scientific projects that occurred there.

LA CASA DE MATERNIDAD

Benito Juarez established *La Casa de Maternidad* ("Maternity House" or "Maternity Clinic") in 1861.[49] The state designed *la Casa* as an alternative to public hospitals, which had gained a reputation as places where only the poorest and sickest individuals entered. Although the majority of patients in *la Casa* came from the working class, the clinic became a place where women of varied social classes sought healthcare before, during, and after birth.

The state took particular measures to attract elite clientele to *la Casa* and to maintain their patronage. The clinic provided patients with clothes, diapers, pillows, blankets, sheets, and mattresses. The clients ate vast amounts of bread, meat, cheese, tortillas, eggs, rice, and beans, and the cooks prepared their meals with salt, lard and sugar. Until 1886, *la Casa* spent more money every month on meat alone than on medications and equipment. Occupants of the clinic also consumed large amounts of chocolate, coffee, tea, wine and even liquor (*aguardiente*).[50]

La Casa maintained relationships with the highest politicians and *científicos*. In fact, several medical students who worked there boasted of their friendships with Porfirio

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49 Ana María Carrillo, "Nacimiento y muerte de una profesion. Las parteras tituladas en México," DYNAMIS, 19 (1999):167-190. Benito Juárez served five terms as the president of Mexico: 1858–1861 as interim, then 1861–1865, 1865–1867, 1867–1871 and 1871–1872.

50 Secretaría de Salubridad (Henceforth AHSSA): Beneficiencia Pública, Establecimientos Hospitalarios, Hospital de Maternidad e Infancia, leg. 2, exp. 15, 3 fol, 1880.

Díaz himself, dedicating their research to him and personally thanking him for his support of the scientific arts.[51] Rubio Romero, who was one of the core Porfirian *científicos*, worked for the state as an official of the Public Welfare Office (*Beneficiencia Pública*),[52] which directed *la Casa* in both financial and practical matters. Beyond political patronage, however, government interference influenced real clinical and practical decisions on the floor of the hospital.

The Public Welfare Office, for example, played a crucial role in mediating a clinical dispute that erupted between practitioners in 1880. In the midst of rapid advances in obstetrical technology, medical faculty at the National Preparatory School (*Escuela Nacional Preparatoria*, or ENP) disagreed about "how to use obstetrical instruments and in which spaces and bodies it was legitimate to do so".[53] Spurred by complaints from several parties, on at least two occasions the Public Welfare Office investigated the School of Medicine concerning discretion in surgical interventions such as the use of forceps during labor and birth.[54]

After its investigation, the Public Welfare Office stated that doctors must "Try to disturb the patients as little as possible, in the physical sense as well as the moral".[55] A debate developed in response to their decree, and a special commission of the Welfare

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51 See, for example, *El Mal de Pinto,* by Dr. Guillermo Tellez, published in 1889 by Oficina Tip. De la Secretaría de Fomento, dedicated to "Porfirio Díaz, como testimonio de afecto."

52 In *The Transformation of Nineteenth Century Liberalism in Mexico,* Charles Hale asserted that Rubio Romero was one of the nine most influential *científicos*. He is a celebrated historical figure in present-day Mexico, and there is a metro stop that carries his name.

53 Laura Cházaro, "Pariendo instrumentos médicos: los forceps y pelvímetros entre los obstetras del siglo XIX en México," DYNAMIS, (2004): 27-51.

54 Cházaro, "Pariendo instrumentos médicos," 33.

55 Ibid., 33.

branch of the Interior Ministry decided that clinicians could only practice medical interventions on "the poor of this capital," who entered the hospital as an alternative to giving birth in their own "small and unhygienic" homes.

Furthermore, the board declared that elite or upper-class (*decente*) women and children certainly "must not be bothered". For the most "unfortunate women" (*desgraciadas*), however, the council declared that "the patients, upon entering *la Casa*, should know that they are obligated to repay the service they demand by suffering all of the inconveniences that a clinical Hospital carries with it".[56] While the state authorized, and even encouraged, surgery of the most invasive kind for the poor, elite women were exempt from medical experimentation.

It was notable that the Public Welfare Office and the Interior Ministry cast their decisions in the moralized terms of "decent" vs. "unfortunate" women. Apparently, *la Casa* segregated patients along similar lines. Writing in 1888, Francisco Flores y Troncoso explained the state division between public and private clients: "When the hospital for the poor was recently founded," he wrote, "a wing was designated for those who made prior reservations, and only Spanish women were received there".[57] In other words, *la Casa* permitted patients with reservations to occupy bed space in the facility up to one month before giving birth. In addition, a hospital regulation directed nurses to

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[56] Ibid., 34.

[57] Flores y Troncoso, *La Historia de Medicina en México*, Volume 3: "Apenas fundado el hospicio de pobres, empezó a haber en el un departamento destinado para los partos reservados, en donde solo se recibía a las mujeres españolas," 568.

escort them through a separate entrance of the clinic and make their stay as comfortable as possible.[58]

Hospital officials linked the term "*Mujeres españolas*" ("Spanish women") with that of "*reservadas*," ("reserved") because the "Spanish" class paid to reserve *la Casa's* services. Presumably, however, those who reserved bed space were not usually born in Spain or were of exclusively European descent. Rather, *la casa* essentially divided women by class. The state dichotomy of privileged (Spanish) vs. unfortunate (*desgraciada*), carried racial references, yet it was also an echo of caste divisions, as well as an indicator of socio-economic status and possibly moral status as well.

Doctors did not use *española* or *desgraciada* in the patient charts they created, but *desgraciada* did occasionally appear in scientific writing. In addition, both Romero and Orihuela spoke of "unfortunate women" (*mujeres desgraciadas*) in the letters they exchanged about clinic practices and procedures, and *desgraciada* was not just a term that state officials used in their internal communication.[59] For example, the death of a patient at *la Casa* caused a public scandal in 1893. Newspaper articles and public officials blamed Concepción López, a midwife who worked there, for the woman's death.[60] In their communication regarding the incident, Orihuela and Romero referred to López as "*una mujer desgraciada"*. In this case, state officials used *desgraciada* as a

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58 AHSSA, Beneficiencia Pública, Establecimientos Hospitalarios, Hospital de Maternidad e Infancia, leg. 2, exp. 24, 4 fol. 1884.

59 AHSSA, Beneficiencia Pública, Establecimientos Hospitalarios, Hospital de Maternidad e Infancia, leg. 3, exp. 43, 1 fol. 1883.

60 AHSSA, Beneficiencia Pública, Establecimientos Hospitalarios, Hospital de Maternidad e Infancia, leg. 6, exp. 16, 14 fol. 1892.

moral and behavioral category, used to portray a woman who suffered a public fall from grace as a result of her circumstances.

While Spanish (*española*) referred to social status and class standing, *desgraciada* was a slippery term that implied both "disgraced" and "without shame". Overall, the early 1880s professional rhetoric in *la Casa* revolved around class status, making a distinction between decent and "unfortunate" individuals. In sum, the ability to pay for medical services in *la Casa* afforded elite women considerable advantages. Those with reservations did not share space with public patients, and the state singled them out for protection from uncomfortable and sometimes dangerous experimental practices. As we will see in the next section, state officials were not alone in using moralized language to indicate a person's behavior or circumstances.

BUENAS AND MALAS EN LA CASA, 1887-1882

Manuel de Esesarte conducted a five-year study at the *Casa de Maternidad*[61] because he wished to investigate the social conditions of women who experienced the birth of a deceased infant.[62] He named his work *Estudio etiólogico y estadístico sobre nacidos-muertos, formado con datos recojidos en la Casa de Maternidad* (An etiological and statistical study of stillbirths, with data collected at the *Casa de Maternidad*). In 1882, the *Escuela Nacional Publica* (ENP) published his work in a book of pediatric

[61] Manuel de Esesarte, *Estudio etiólogico y estadísico sobre nacidos-muertos, formado con datos recojidos en la casa de maternidad,* (Mexico City: Tipografía de Berrueco hermanos, Primera Calle Ancha Número 12, 1882).

[62] He classified stillbirths as miscarriages that occurred after the sixth month of pregnancy. He separated them from "*abortos*" (abortions). *Aborto* sometimes referred to a miscarriage and sometimes referred to the deliberate termination of a pregnancy. He did not specify whether the "*abortos*" were miscarriages or not.

statistics. During the course of his study, a total of 1,119 women gave birth in *la Casa*, and of those, 164 (14.65%) involved a lifeless child.

Esesarte believed that a woman's moral compass and lifestyle affected the outcome of her pregnancy, and so he kept detailed registers of each patient by recording her occupation, age, type, and marital status. In the body of the study, he speculated about the possible connections between maternal conditions and the causes of fetal death. His extended guesswork seems ironic in the conclusion of his text, where he stated authoritatively, "the imprudent administration of oxytoxic drugs" (used to stimulate labor) was, in fact, the primary source of infant mortality. As a closing statement he offered: "As we can see, the administration of medication is the leading cause of death, and we must recognize that the effects on the child often extend to the mother as well".[63]

Despite his final conclusions, Esesarte's charts somewhat strangely did not include information about surgical procedures or medication use. On the contrary, his study focused on demographic information. He found, for example, that just over half of the patients were between the ages of 20 and 30 (53%), while 21% were in their teenage years (16 was the youngest age). The remaining 26% were between 30 and 45 years. The average patient did not have many children: 78% had given birth less than three times including the deceased infant.

Nearly all of the women worked to support their families. Almost half (77 of 164) labored as domestic servants (*doméstica*); 21 were corn grinders (*molendera*); 17 washed clothing (*lavandera)*; 10 stitched apparel as seamstresses; and smaller numbers worked as

[63] Esesarte, *Estudio etiólogico,* 62.

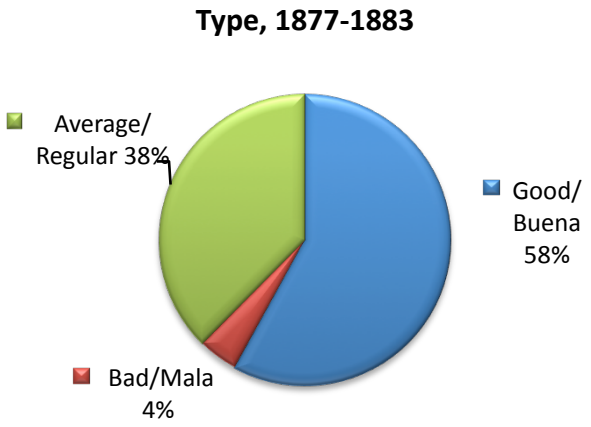
sales-women, cobblers, tortilla-makers, manual-laborers, and factory employees. Only 11 reported no employment, and a disproportionate number of those who did not work were married. In other words, the majority of *la Casa's* patients belonged to the working class, although a small percentage did artisanal and sales work while others performed more grueling physical tasks.

Esesarte's figures on age and occupation were not controversial, but he also used a much more subjective categorization, that of "type". Indeed, he recorded patient type (*tipo*) as "good," (*buena*) "average," (*regular*) or "bad" (*mala*). Why did he make these distinctions, and what did they mean? Why were the three rubrics of type connected to a scale of virtue, or worth? While the author did not offer a strict definition of type, he did discuss the importance of maternal type to fetal health. He offered that a "good woman" (*una mujer buena*) possessed "good ground (*terreno)* in which the new human will develop," and he concluded: "the women's type (*tipo*) will greatly influence the pregnancy, and determine whether it is happy (*féliz*) or unfortunate (*desgraciado)"*.

Esesarte also connected class status to morality. "Poverty*"* he stated, "is the companion of immorality, ignorance, and superstition".[64] This was critical since the "viability and destiny of a nation depend on the morality, activity, and strength (*vigor)* of its people (*raza*)".[65] He was concerned about the medical prognosis for underprivileged women, and he worried that their allegedly poor health might impact future generations.

[64] Ibid., 9.
[65] Ibid., 10.

It is notable, however, that Esesarte did not believe that many women fit the "bad" (*mala*) profile. As represented in the diagram below, his chart designated 58% of the patients as "good", 38% "average", and only 4% "bad".



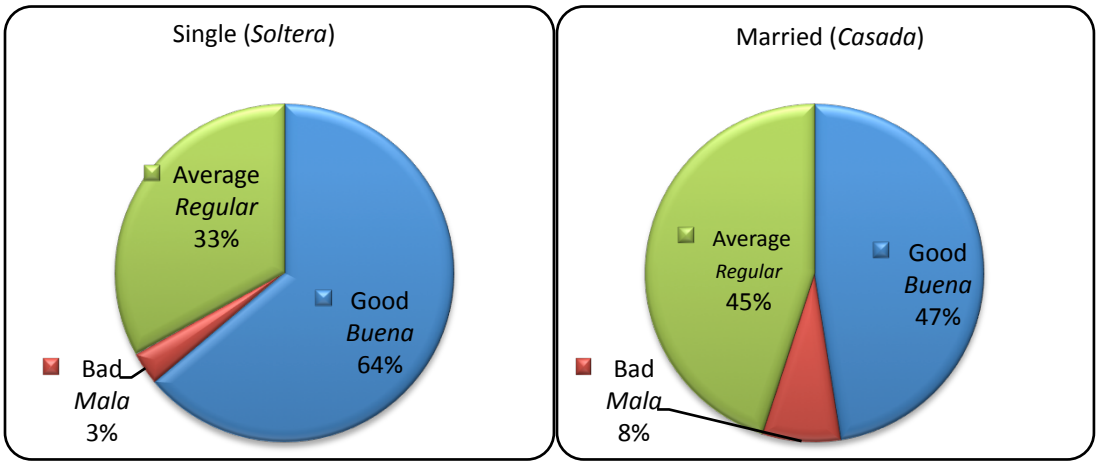
Although the majority of women may have been "good" in Esesarte's eyes, he was concerned about their marital status and the resulting implications of illegitimate pregnancy. A full 62% of the women in his study were single (*soltera*), and 11% were widows while only 25% were married. "In an illegitimate union," he wrote, "the work that is accomplished is not only less productive, it is also completely abandoned as maternal duties arise".[66]

While Esesarte may have meant work within the home, he probably referred to public employment. He thus proposed that unmarried women did not adequately contribute to national productivity. Of course, the data suggested that the vast majority of his patients were employed in a way that bolstered the economy. For example, a

[66] Ibid., 10.

substantial number worked in factories, making matches, sewing, and processing chocolate, all of which were part of Porfirian efforts to modernize the economy.

Yet, it was very significant that Esesarte's data did not represent a clear correlation between type and marital status. On the contrary: he classified 64% of single women as "good", in comparison to only 47% of married women. The "bad" classifications followed the same trend: while he reported that 3% of single women were "bad", he gave the same title to 8% of the married women. Among married women, he classified almost as many "average" (45%) as "good" (47%). In comparison, he only designated 33% of single women as "average". In sum, Esesarte painted single women's "type" in a more favorable light than that of their married counterparts.



Esesarte included short descriptions of his patients in the appendix of his study, and considering some of the anecdotes could help clarify his classifications. Though most of the women he classed as "bad" were married, there were also single women who he

categorized as “bad”. One example was a 16 year old with no children, who worked as a cook and experienced a miscarriage at 6 months of pregnancy. The doctor viewed another young woman (17 years old) as “bad”. She worked as a servant, already had one healthy child, and lost the fetus at 7 months due to the premature rupture of the amniotic fluid.

Esesarte may have deemed another patient “bad” because he suspected that her second husband had contaminated her with syphilis. The woman in question had lost three infants, including the child who passed away in *la Casa*. She was married, 35 years of age, and worked as a seamstress. Another “bad” patient was 38 years old and had nine healthy children. She was also married, and worked as a domestic servant. Esesarte reported that the mother and infant died in *La Casa* after unsuccessfully attempting to give birth “in the street” (*en la calle*).

A 20-year-old seamstress who visited *la Casa* for complications in her third pregnancy was also among the “bad women” *(las malas)*. Her other two children were born in good health, but she experienced a “traumatic fall” at eight months of pregnancy. Shortly thereafter she reported having “a considerable spell of rage” (*una gran colera*), and the next day at the clinic, doctors informed her that her infant had deceased. This notable case was the only one in which Esesarte mentioned a “spell of rage.”

Based on Esesarte’s descriptions of the *malas*, he seemed to view “bad” women as those who did not maintain public controls over their bodies. Giving birth on the street, having an emotional outburst, and displaying hints of promiscuity all implied social falls from grace, so he apparently used “badness” to depict disagreeable public conduct. In

other words, Esesarte's descriptions strongly suggested behavior and moral judgments concerning the location or frequency of a woman's undesirable behavior. Notably, demeanor is situational and subject to modification, meaning that Esesarte's classifications were probably not based on racial prejudices or inherited traits.[67]

Esesarte certainly believed that maternal emotions could impact a pregnancy and provoke fetal death, and he listed eight "good" women whose "emotions" (*emociones*) allegedly ended their pregnancies. One was a 25-year old domestic servant, who was married and of a "good" type. Her medical chart listed "two abortions" (*dos abortos*), which probably referred to miscarriages because doctors usually referred to elected terminations as "infanticide". Esesarte's study often included copious notes to explain each stillbirth, but, surprisingly, in this case his commentary was limited to one word: "emotions" (*emociones*).

Esesarte suggested that "emotions and bodily fatigue" led to complications and stillbirths for two other "good" women, who were both married. One had seven children before 31 years of age while the other, a "bed-maker" (*recamarera*), had one child and a history of two miscarriages (*abortos*). *La Casa* also admitted three unmarried patients who only complained of "emotions" before their infants passed away. One of the single women was 20 years old, had a healthy child, and worked as a cook.[68] The other was a 20-year-old servant who was pregnant with her first child.[69] One 30-year-old servant

[67] Although, of course, those factors certainly could have played into Esesarte's classifications and medical categorizations in general.
[68] Ibid., Index, patient number 137.
[69] Ibid., Index, patient number 83.

complained only of "emotions and diarrhea" before her 6-month fetus deceased, and Esesarte also designated her as "good".[70]

Esesarte frequently listed the occurrence of a "scare" or "fright" as the sole cause of fetal death among "good" women. A married, 21 year old servant lost her infant at 8 ½ months of pregnancy, with the explanation that she had suffered "a fright" (*un susto*).[71] A single 29-year-old tortilla-maker with two children also lost her eight-month fetus after "a fright, followed by an abrupt shiver".[72] A 28-year-old laborer with one child experienced a scare, although she specified that the culprit was an inebriated man. Since being "frightened" by the man, she felt chills and abdominal pain, and she eventually lost the pregnancy at 6 ½ months.[73]

In some circumstances, Esesarte attempted to find additional causes for the stillbirth. In the example of a 26-year-old servant who was the unmarried mother of three children, he claimed: "the child died as a result of the mother's moral affliction".[74] While ambiguous, the above depiction was typical of the author's study. Based on his case notes, he viewed the "good type"/"bad type" (*buena/mala*) labels as a medical gauge with which to assess a woman's moral and emotional state, which he believed had a profound impact of the outcome of pregnancy. For example, while "good" women experienced "emotions," during pregnancy, no "bad" women did. In fact, the nearest thing to "emotions" for a "bad" woman was a "fit of rage".

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[70] Ibid., Index, patient number 73.
[71] Ibid., Index, patient number 89.
[72] Ibid., Index, patient number 84.
[73] Ibid., Index, patient number 81.
[74] Ibid., Index, patient number 155.

Although Esesarte suggested that "type" correlated with poverty, in the end, he only deemed 4% of his patients "bad." This is a strong indication that he held a positive attitude towards Mexico City's working class women. Perhaps, at the very least, he believed that they were capable of bettering their lives. At the beginning of the Porfiriato moral and typological classifications in medicine coincided tentatively if at all, and professionals like Esesarte placed much more emphasis on social control than hereditary "racial" traits. Such attitudes would change in the closing decades of the regime.

BONITAS AND FEAS IN THE JUÁREZ HOSPITAL, 1891

By the 1890s the *Escuela Nacional Preparatoria* (ENP) had published more obstetrical research than in the previous two decades combined.[75] Social scientists placed an emphasis on quantitative analysis, although at times they collected large amounts of demographic information without providing a written explanation of their work or any conclusions. For example, medical students conducted a series of studies in Mexico City, which the ENP published as *Estadística del Hospital Juárez* (*Statistics from the Juárez Hospital*).[76]

The last part of this chapter will discuss one set of data from the Juarez Hospital statistics, which displayed information on 177 women. Like Esesarte's register it focused on age, occupation and type, but the records from 1891 contained more variables than

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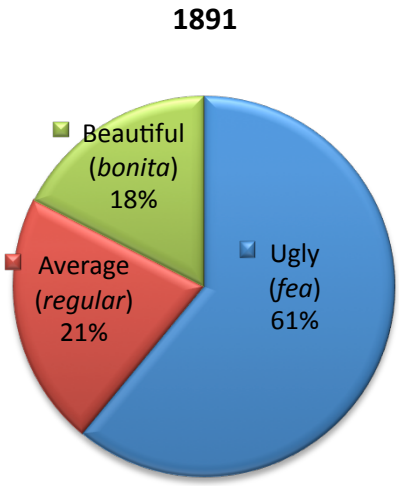
75 Carmen Casteneda de Infante, *Catalogo de tesis de medicina del siglo XIX*, 1988.

76 *Estadística del Hospital Juárez,* (Mexico City: Imprenta de Ignacio Escalante, Bajos de San Agustín, Número 1, 1891).

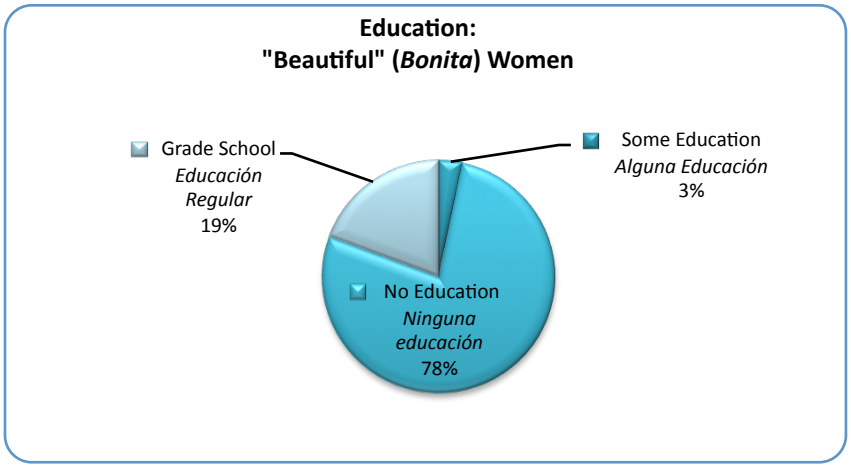
those from the early Porfiriato. For example, the later doctors chose to document their patients' level of education, father's occupation, and the class status of the woman's first sexual partner.

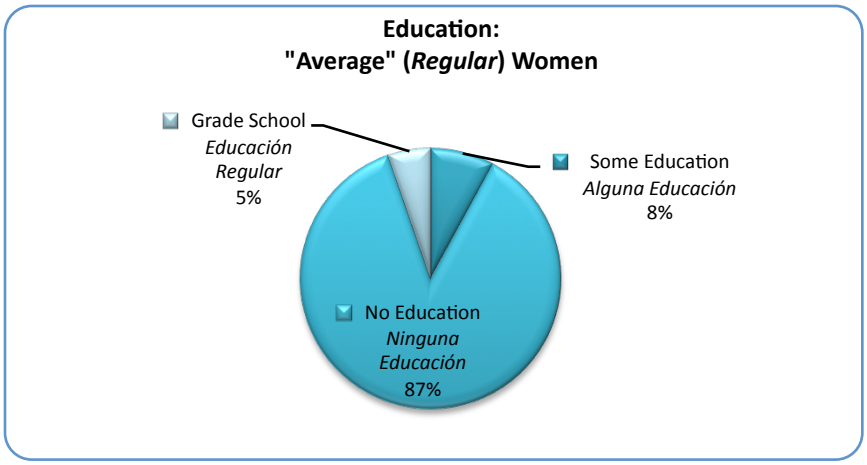
As with Esesarte's study, "type" was the most subjective categorization in the late-Porfirian information. By 1891, however, the medical establishment had twisted the meaning of "type" to classify women as "beautiful" (*bonita),* "average" (*regular*) or "ugly" *(fea*). Why did the doctors choose to record their perceptions of physical beauty in 1891, and what was the meaning of "type"? These questions guided the subsequent discussion, which investigates type vs. education, occupation, father's occupation, and occupation of first lover. Scientists in the Juárez Hospital declared 61% of their patients "ugly" (104 out of 177 women), while they viewed 18% as "beautiful" and 21% merely "average". Thus, in a relatively short period of time, scientific judgments of female "type" had shifted from overwhelmingly positive to very negative.

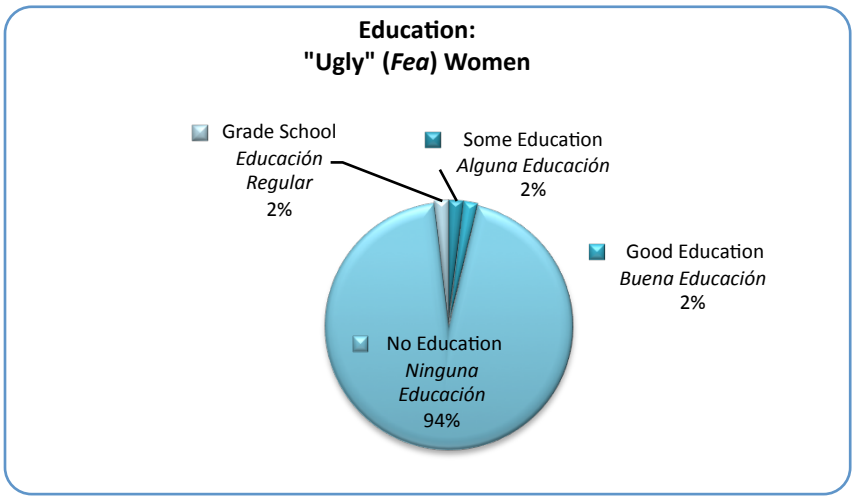


The subjects of the 1891 chart had attained four different levels of education: no education (*ninguna educación*), some education (*alguna educación*), grade school (*educación regular*), and good education (*buena educación*). Remarkably, more than 80% of women belonged to the first category and had no education whatsoever.

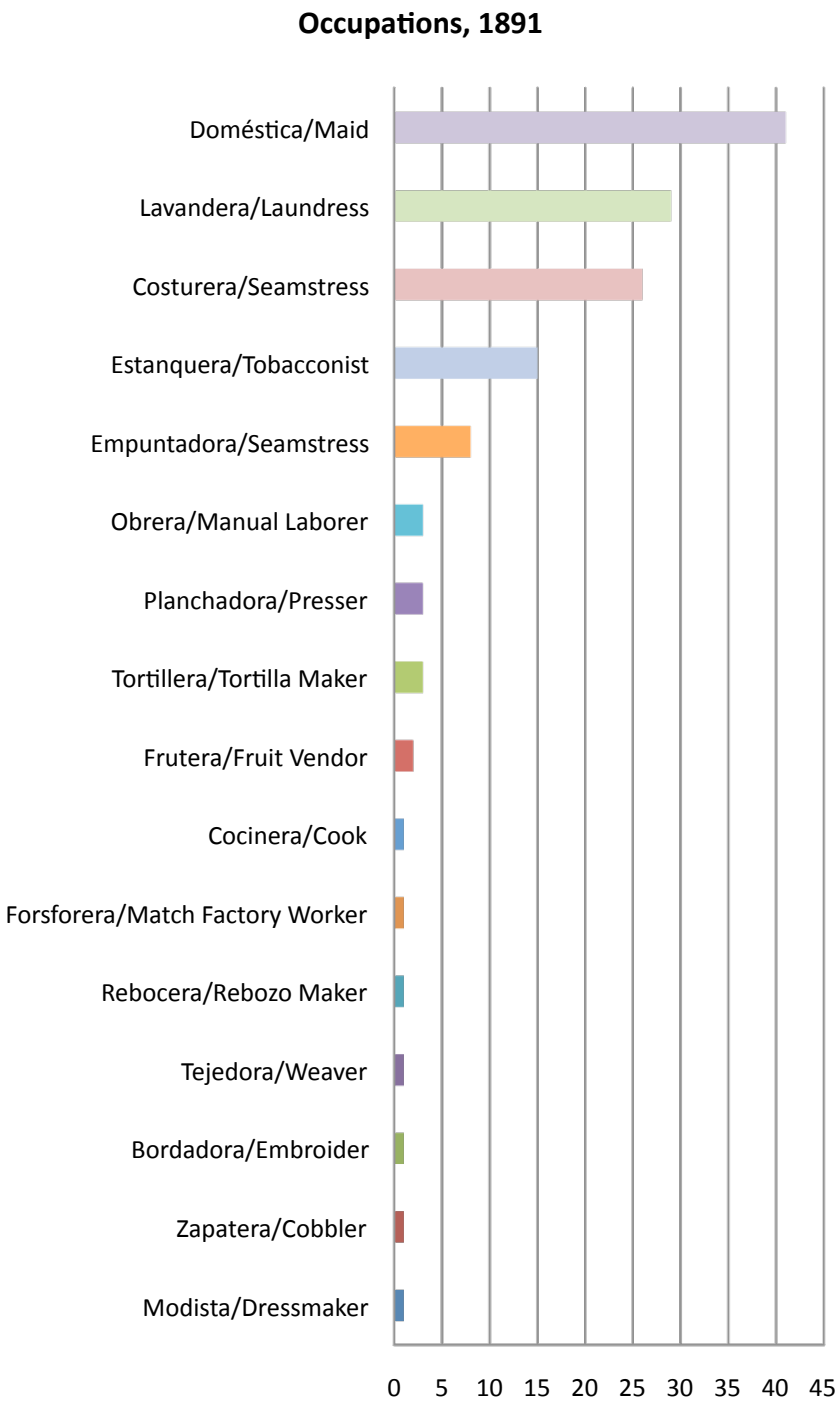
Type proved a significant variable in predicting educational levels. Approximately three-quarters of women the study classified as "beautiful" had no education (78%), whereas 94% of those designated "ugly" experienced no schooling. The percentage of "average" women with no education fell between the two extremes, at 87%. Women who doctors saw as "beautiful" were much more likely to have achieved a grade school education: 19% of "beautiful" women reached this level, whereas only 2% of so-called "ugly" women and 5% of "average" women completed primary school. While type decidedly linked with education, a notable 2% of the "ugly" women had a "good education" *(una buena educación).*







Clearly, those classified as "beautiful" had attained higher levels of education than their supposedly "ugly" counterparts. The privilege of a higher socio-economic status increased access to education, thus the correlation between type and education suggested that professionals saw poorer women as less physically desirable. Examining the occupations of different "types" of women provides a more nuanced picture of the relationship between class and type, hence the diagram below represents the most common occupations of women in the Juárez Hospital.


Occupations, 1891
Doméstica/Maid
Lavandera/Laundress
Costurera/Seamstress
Estanquera/Tobacconist
Empuntadora/Seamstress
Obrera/Manual Laborer
Planchadora/Presser
Tortillera/Tortilla Maker
Frutera/Fruit Vendor
Cocinera/Cook
Forsforera/Match Factory Worker
Rebocera/Rebozo Maker
Tejedora/Weaver
Bordadora/Embroider
Zapatera/Cobbler
Modista/Dressmaker
0 5 10 15 20 25 30 35 40 45

Patients in 1891 reported similar occupations as those from 1877-1882. A large percentage of women toiled as domestic servants (*doméstica),* a significant number washed clothing for a living, and many were seamstresses. A smaller number held the following positions: cobbler, tortilla-maker, *rebozo*-maker, clothes-ironer, manual laborer, dressmaker, fruit-seller, factory-employee and cook. While the majority of women labored in low paying and demanding sectors of the public economy, some performed more skilled and specialized crafts such as cobbler and tobacconist. If anything, more of the 1891 patients enjoyed lucrative employment than those in 1877-1882.

The correlation between occupation and type suggested that scientists saw the lowest class of workers as the least attractive. Both "beautiful" and "ugly" women made their living as domestic servants, but 80% of domestic servants received classification as "ugly" (there were 33 "*feas*" out of 41 domestic servants), while only 9% of domestic servants were allegedly "beautiful". Out of 104 "ugly" women, 55 held positions as a domestic servant or clothes-washer (*lavandera*, 22 women), and the remaining "ugly" women were likely to work as manual laborers, tortilla-makers, and cooks.

"Beautiful" and "average" women, meanwhile, engaged more frequently in trades such as cobbler, dressmakers, and weaver. A notable cluster of women worked as tobacconists, which was a fairly prestigious trade that involved large sums of cash and international business deals. Out of 15 tobacconists, eight were deemed either "beautiful" or "average," which was slightly higher than the overall average.

The scientists also asked women to describe their father's occupations, which were notably different from their own. First, men filled a much greater range of occupations than their daughters (63 jobs for men vs. 16 for women), and male employment also differed vastly in terms of class and prestige. For example, several fathers worked as police officers, engineers, landowners, and lieutenants. Class status, however, was not always stable within families, and some daughters of upper-class men found themselves working as domestic servants.

Among the fathers, no single occupation predominated, as did domestic work for women. Most of the women reported that their fathers were employed as carpenters, accounting for 16 cases. Working as a cobbler, associated with 13 men, was also common. Seven women were the daughters of salesmen and farmers; Six reported bricklayers and six mule drivers; five soldiers; four army officers, four silversmiths, four civil servants (*empleados*), four miners, four musicians, and four tailors. Meanwhile, there were three blacksmiths, three army coronels, three butchers, and three cart-drivers; two day laborers, and two army generals. Also included were a land-owner (*hacendado*), singer, barber, lifeguard, circus performer, comedian, meat tanner, domestic servant (*doméstico*), printer, engineer, athlete, shop worker, sailor, steward, notary, police officer, landlord, alcohol-maker (*pulquero*), lieutenant, and candle-maker.

A woman's type did not rigidly correlate with the prestige of her father's occupation. For example, many women who doctors saw as "beautiful" were the daughters of working class men. Six women that the study classified as "beautiful" stated that their fathers worked as carpenters, consistent with the overall trend. The white-collar

fathers, however, had higher incidences of "beautiful" daughters, which was the case for a number of salesmen, coronels, army officers, and a notary public who fathered a "beautiful" daughter with a grade school education. One engineer's daughter worked as a seamstress, had attained a grade school education, and was "average" looking. A police officer, on the other hand, had a daughter who washed clothes for a living, had no education, and was classified as "ugly".

The Juárez Hospital study was primarily concerned with female sexual activity, class status, and physical appearance. Yet, why did investigators ask women about their fathers? The paternal questions were striking, and the medical establishment's focus on men's work was decidedly patriarchal. Disregarding the women's mothers implied that they were either absent or not important, and it also negated the value of their maternal labor and wage-earning work. In addition, when doctors asked women about their fathers whilst investigating their sexual activity, they suggested that a patriarch owned his daughters' sexuality. Or, at the very least, Porfirians believed that there was a connection between the social class where a father located his daughter and the kind of man she would choose- or accept- as her first lover.

Indeed, a girl's first sexual partner often labored in the same sector as her father, and Porfirian doctors presumably investigated the correlation because they wished to prevent lower-class sexual congregations. In a most intriguing section of the Juárez Hospital statistics, scientists posed questions about the man who "deflowered" the girl in question (*el desflorador*). The list of sexual partners mentioned professionals, elites, semi-elites, and skilled craftsmen, along with manual laborers and working class men.

Very wealthy elite lovers did not appear in large numbers. The most notable white-collar professionals were 6 salesmen, 3 owners of print presses, 2 lawyers, 2 students of medicine, 1 doctor, 1 teacher, and 1 politician. Six women reported that they had not engaged in pre-marital sex, and in these cases the researchers simply listed "their husband" (*su marido*). Thus, when a woman reported that her first intercourse occurred with her husband, Porfirians were not interested in his profession. This suggested that they were primarily concerned about illicit sexual behavior, the type of women who could be proven to be more promiscuous, and those women who transgressed class or aesthetic boundaries by means of sexual relations.

Although the register of lover's occupations is too extensive to be portrayed in a diagram, it is worth reproducing in a table.

13	Carpenter	2	Athlete	1	Lithographer
11	Military Man	2	Acrobat	1	Politician
10	Civil servants/general employee (*empleado*)	2	Army General	1	Shop worker
7	Cobbler	2	Student of Medicine	1	Farmworker
7	Iron Worker	2	Mule Driver	1	Brick-maker
7	Unknown	2	Singer	1	Book seller
7	Butcher	2	Lawyer	1	Farm owner
6	Salesman	2	Cart driver	1	Cavalry man
6	Husband of the Woman	2	Barber	1	Fireman
6	Leather craftsman	1	Cook	1	Railroad Employee
5	Stitcher	1	Transporter of Goods	1	Mailman
4	*Pulque* (fermented alcoholic drink)-seller	1	Army Captain	1	Candy Vendor
3	Soldier	1	Horse Wrangler	1	Domestic servant (*doméstico*)
3	Day Laborer	1	Bricklayer	1	Runner
3	Tailor	1	Sarape-maker	1	Comedian
3	Saddler	1	Telegraph operator	1	Army Coronel
3	Miner	1	Cambaya salesman	1	Teacher
3	Army official	1	Business Agent		
3	Baker	1	Rebozo-stitcher		
3	Owner of a Print Presses	1	Land Owner		
3	Painter	1	Manual Laborer		
3	Student	1	Grinder (*molinero*)		
2	Athlete	1	Doctor		
2	Acrobat	1	Teacher		

Porfirian doctors clearly wished to investigate trends in reproduction, and they were interested in the relationship between beauty, class, and coupling. They were probably disappointed, because the final data was striking for its discontinuity. Although the majority of women were working class, many associated with semi-elites and craftsmen at least once. Either way, lower class ladies' sexual encounters certainly provoked anxiety for the medical establishment.

Although it was far from rigid, there was a connection between a girl's occupation and that of her first lover. Domestic servants were far more likely to be deflowered by carpenters. This may be due to the prevalence of both professions, but it was probably because carpenters entered private homes during the workday and presumably began to court the domestic servants in their place of employment. The tables below provide a more complete picture of lovers in relation to type

"Beautiful" Women's First Partners

Military Man	3
Salesman	3
Cobbler	3
Saddler	2
Land Owner	1
Lawyer	1
Day Laborer	1
Carpenter	1
Business Agent	1
Comedian	1
Mailman	1
Miner	1
Telegraph Worker	1
Army Official	1

Army General	1

“Ugly” Women’s First Partners

Carpenter	9
Military Man	6
Shopkeeper	6
Their Husband	5
Cobbler	4
Butcher	4
Salesman	3
Soldier	3
Horse-Cart Driver	2
Student	2
Barber	2
Army Official	2
Printer	2
Baker	2
Athlete	2
Acrobat	2
Singer	2
Fireman	1
Army General	1
Shop worker	1
Unknown	1
Domestic Servant	1
Day-Laborer	1
Candy Vendor	1
Farm worker	1
Brick layer	1
Book Vendor	1
Transporter of Goods	1
Doctor	1
Lawyer	1
Miner	1
Manual Laborer	1
Army Coronel	1
Cook	1
Sarape-maker	1
Tailor	1
Army Captain	1

Horse Wrangler	1
Runner	1

The women of the Juárez Hospital study lost their virginity, on average, at the age of 14 or 15. So-called "ugly" women engaged in sex between the ages of 10 and 23, while allegedly "beautiful" women reported that their first intercourse occurred between ages 11 and 21. The most common age for "ugly" women to have lost their virginity was 15, whereas for "beautiful" women it was 14. Although Porfirian scientists probably hoped to prove that less desirable groups were sexually active with inappropriate partners at indecent ages, this was evidently not the case.

CONCLUSIONS

In the early Porfiriato, Esesarte's quantitative study forged a tentative connection between a woman's emotional state and the outcome of her pregnancy. Although he believed that improper social behavior and immorality threatened the nation, his classifications of working class women were overwhelmingly positive. As scientific politics progressed, Porfirian scientists adopted an unprecedented focus on biology and innate characteristics, which fused with their earlier concerns about behavioral and moral deviancies.

This chapter has demonstrated that medical attitudes towards working class women became more negative between the beginning of the Porfiriato and the 1890s. Yet, by avoiding strict definitions of "good/bad" and "beautiful/ugly," doctors were able to employ "type" in a broad manner. Furthermore, while documenting "type" and

avoiding racial classifications, scientists attempted to draw implicit lines of progress vs. degeneration.

As we will see in the next chapter, the coded language of Porfirian demography contrasted with scientific attempts to measure an empirical distance between the Mexican "race" and the indigenous one. Although they used ambiguous categorizations, however, late-Porfirians employed social-scientific studies to present a politically appealing blend of aesthetic, biological, and moral hierarchies. In the process, they revalorized class and racial divisions and reconceptualized the virtue of Mexico City's working women.

Chapter 2:
The Rise of Scientific Politics in Obstetrical Practice, 1869-1911

In April of 1911, a heated debate took place in Mexico City's Academy of Medicine.[77] *El Imparcial* reported on the incident, with an article entitled "Elongated head shape predominates in Mexican children". According to the piece, a foreign Dr. Landa delivered a talk about the presence of small cranial measurements among Mexican children. Dr. León, a Mexican obstetrician, contested that Landa's conclusions were "perfectly useless (*perfectamente inútil*)."

Two other Mexican doctors agreed with Dr. León's denunciation of Landa's cranial measurements. One, Dr. Mejía, suggested that small cranial capacity in Mexico did not indicate subnormal intelligence among the population. According to Mejía, the problem lay elsewhere. Mexican skulls were not inherently small, he said, but rather they were forced to elongate during birth, because "the pressure of a small pelvis obliges the head to take a certain shape". Under fire, Dr. Landa rescinded, "answering that he has very little experience in the area, but in general, the idea seems accurate".

Although phrenology was gradually fading from twentieth-century scientific politics, foreign doctors challenged Mexican elites regarding how their youth measured up to international standards. Defending their intellectual territory and refuting outside insinuations, Mexican obstetricians emphasized the extent to which they believed that insufficient maternal structure was harming and deforming Mexico's prospects.

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[77] "Predomina en los niños Mexicanos cabeza de forma alargada," *El Imparcial*, April 29, 1911, 8.

As Porfirio Díaz's dictatorship progressed, scientific politics effectively reshaped higher education and led doctors to conclusions like those expressed in public in April 1911. This chapter focuses on obstetrical training in order to show that the rise of Porfirian scientific politics simultaneously shaped intellectual debates and the practices that occurred within the clinic walls. As a whole, the chapter illustrates that elite preconceptions of race, class, and gender influenced medical practices in public hospitals.

Charles Hale and Robert Buffington have examined nineteenth century scientific politics in Mexico, demonstrating that positivist thought impacted state relations with marginalized groups by embedding racial and social prejudices in purportedly neutral bodies of scientific knowledge.[78] Charles Hale has described this process, explaining that scientific politics emerged in the factional turmoil following Porfirio Díaz's military coup in 1876. By 1878, according to Hale, positivism provided the theoretical core of policy assumptions for the Díaz dictatorship.[79]

Porfirian era attempts to rank human groups biologically fulfilled political as well as scientific agendas. On a national scale, the positivist influence was especially notable in efforts to restructure the curriculum of higher education. Higher education was subject to controversial reorganization which, according to Hale, was "a pawn in the ideological conflict" of the nation, and the battleground was the Escuela Nacional Preparatoria

78 Buffington, *Criminal and Citizen,* 35.
79 Hale, *The Transformation of Mexican Liberalism,* 3.

(ENP).[80] For the purposes of this chapter, I will therefore focus on one sphere of higher education in Mexico: obstetrical education in the Medical School of the ENP.

As Hale explains, the definitive reemergence of positivism as the official philosophy of higher education in Mexico occurred with the Second National Congress of Public Instruction of 1891 and the subsequent law of 1896. This point is critical for the purposes of this chapter, as the primary sources are publications authored by students and instructors of the ENP's medical school. My examination of the ascendency of positivist thought from the 1870s on demonstrates that the ENP's medical curriculum was steadily contaminated by scientific politics throughout the course of the *Porfiriato.*

This chapter will focus on publications by Mexican obstetricians and medical students. The first was published in 1869, before the gradual colonization of obstetrical knowledge by positivist ideas. Thus, it serves as a base from which to trace shifts in obstetrical ideology and practice in later decades. The chapter measures the impact of positivism on obstetrics by tracing the following lines of continuity: the growing declaration of racial and class hierarchies, based on measurements of Mexicans' purportedly insufficient reproductive anatomy; the belief that such deficiencies can be remedied by scientific knowledge and technical interventions; and the declaration of a patriarchal scientific order couched in a moral rhetoric about progress.

"HAPPY BIRTHS" IN 1869

[80] Ibid., 139.

In 1869, Juan María Rodríguez wrote *Breves apuntes sobre la obstetricia en México* (*Brief Notes on Obstetrics in Mexico)* because he aspired to become director of the Obstetrical Clinic at the (ENP).[81] The hiring committee was persuaded by his efforts, and he served as the head instructor of the Obstetrical Clinic for at least eleven years.[82] Unlike the student dissertations examined below, Rodríguez did not write about one specific area of obstetrical research and practice. Rather, he described his experience with rare and challenging obstetrical cases involving tumors, cysts, and hemorrhages that interfered with childbirth. Of the seventeen cases Rodríguez described, he only once mentioned the use of chloroform and forceps. The fact that within just twenty years these two medical interventions were widely employed, and had become sources of intense contention and debate, reveals the degree to which obstetrical practices changed over the course of the *Porfiriato*.

Rodríguez's publication was also notable due to his discussion of dystocia, which refers to difficulty in labor and birthing.[83] While subsequent obstetricians argued that dystocia was a common problem among Mexican women due to small pelvic

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81 Juan María Rodríguez, *Breves apuntes sobre la obstetricia en México,* (Mexico City: Impr. De J.M. Lara, 1869).

82 The duration of Rodríguez's employment is demonstrated by Julian Quintero's dedication to "his beloved teacher" Rodríguez in his 1880 inaugural thesis: Quintero, Julian. *Clínica de obstetricia; acomodamiento del feto, diagnostico clinico de las presentaciones y posiciones del feto por medio de la palpacion abdominal, version por maniobras externas.* Mexico City, Mexico. Impr. De Ignacio Escalante, 1880.

83 Dystocia refers to a "pathologic or difficult labor, which may be caused by an obstruction or constriction of the birth passage or abnormal size, shape, position, or condition of the fetus."

measurements, he affirmed that the great majority of births in Mexico were "natural and happy".[84]

Although the Rodríguez's publication did not attribute biological differences to nationality, class or anatomy (as many that followed would), his discussion of midwives certainly contained a moral rhetoric indicative of nineteenth century politics. Declaring that midwives were "incapable women, without education, and possibly devoid of morality," he claimed that, naturally, they "degraded and corrupted" the "art" of attending childbirth. "I cannot begin to count the number of deaths" he continued, "that have occurred at the hands of vulgar midwives".[85]

Rodríguez's writing was also suggestive of the way that he may have described midwifery to his students. It is notable, for example, that his description of scientific progress was gendered: he declared that midwives were incapable *women*, whose practice should be put in the hands of "capable *men"* (*hombres hábiles*), as they were an instrumental step in Mexican "progress".[86] The doctor additionally voiced his approval of the prohibition of midwifery in Madrid, stating that only surgeons were allowed to attend childbirths there.[87] Rodríguez's comments about Madrid indicated that a transnational scientific dialogue was already in progress as of 1869, although he did not cite as many European scholars as his students would. As a last note, Rodríguez's eleven-year employment as head of the ENP's obstetrical clinic demonstrates how limited the medical

[84] Rodríguez, *Breves apuntes,* 23.
[85] Ibid., 6.
[86] Ibid., 6. Emphasis mine.
[87] Ibid., 6.

elite was in nineteenth century Mexico, meaning that one individual could vastly impact the discourse of medical practice and training.

Through the 1870s, obstetrical discourse was only marginally shaped by explicit positivist rhetoric, and not entirely connected to international ideological networks. While Rodríguez may have exhibited the elitist, gendered prejudices of the Porfiriato, he had not yet developed a positivist method of measuring anatomical deficiencies, as students of the ENP's obstetrical clinic in the 1880s would.

THE "FAULTY TRAIT" IN 1888

As he 1880s progressed, the positivist influence strengthened its grasp on Mexican obstetrics. In 1888, Francisco Flores y Troncoso completed a three-volume text entitled *La historia de medicina en México* (*The history of medicine in Mexico*). It was impressively thorough, and each of the books ran between 700 and 800 pages. Flores y Troncoso dedicated a large portion of the third volume to Mexican obstetrics and gynecology, describing the most influential doctors, theories and practices of his era. The doctor discussed pelvimetry several times, and in the last chapter of the third volume he theorized that the future of Mexican medicine would revolve around the practice of "racial identification via skeleton structure". He wrote,

> The identification of the indigenous race by means of their skeleton is another point that has captured the attention of our studies. The professor of the obstetrical clinic [Juan María Rodríguez] has observed that natural birth presents some

> difficulties in Mexico, and so he has supposed that the pelvic configuration and the birthing canal of Mexican women must be somehow defective. [88]

As we saw, in 1869 Juan María Rodríguez certainly did not believe that "birth presented difficulties in Mexico", but by 1888 he reportedly claimed that "Mexican women must be somehow defective". Flores y Troncoso, for his part, asserted that there was a serious link between indigenous women and flawed reproduction:

> Upon further investigation, we discovered that the pubis of indigenous women is higher than in the women of any other race, and it is characterized by a very notable downward and backward inclination. Now, as we have observed the same problem in Mexican women, it must result from the mixing of the Spanish race with the natives of this country. In the first group we do not encounter anything to explain the cause of the modification of the pelvis, so it is natural to suppose that in the second group we find the faulty trait, one which has without a doubt been passed down hereditarily since the conquest, and in its remains we still find these particularities.[89]

Flores y Troncoso characterized indigenous women's pelvic cavities and their birth canals as inadequately sized and erroneously shaped. It is particularly significant that he used the words "downward" and "backward", because the terminology implied that indigenous people exhibited biological signs of failure in the evolutionary race. As indigenous communities ostensibly hindered modernization efforts by means of their "cultural backwardness," the medical establishment theorized that indigenous women's "backward" bodies rebelled against progress as well.

In Flores y Troncoso's view, the seeds of racial degeneracy were present at the very beginning of life, and the uterus and pelvic cavity represented much more than

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[88] Flores y Troncoso, *Historia de la Medicina en México, Tomo III*, 745.
[89] Ibid., 745.

anatomical pieces. Not only were they the most intimate hollows of the body, they were also essential to the state because national and racial strength began with incubation, and the inheritance of a "faulty trait" could have broad social consequences.

It is important to note that Flores y Troncoso referred to the indigenous "race" as one monolithic group apart from the "Mexican race." Yet, in the late nineteenth century, not just one indigenous group lived in Mexico. Rather, there were thousands of indigenous communities who spoke hundreds of distinct languages. In fact, at the time, more than one third of the nation's population spoke an indigenous language.[90]

Flores y Troncoso extended "race" to mean both nationality (Mexican) and ethnicity (Spanish or indigenous). He also proposed that scientific medicine was a tool with which to define the racial boundaries of the imagined national community, or to offer a racial definition of Mexicans. Thus, he simultaneously used race as an ambiguous term and an exact one, and as a cultural/national identity and a biological category.

In this vein, Flores y Troncoso voiced anxiety about the extent to which Mexicans exhibited indigenous traits, and he proposed that scientific medicine could identify the allegedly weaker strain of women. He continued,

> At any rate, we can amass the data we have collected so far in order to identify the skeletons of the Mexican women who have extraordinarily high pubic bones and pelvic cavities with pronounced downward and backward inclinations. These characteristics, along with the molars, will perfectly identify a woman of the pure indigenous race. Another useful manner of identifying this race is the configuration of their cranium and their facial angle.[91]

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[90] Micheal Meyer and William Sherman, *The Course of Mexican History, Third Edition* (Oxford: Oxford University Press, 1987), 378-382.

[91] Ibid., 745.

In this paragraph, Flores y Troncoso suggested that some *Mexican* skeletons belonged to "the pure indigenous race". He was clearly preoccupied about the effect of miscegenation on the hereditary make-up of Mexican women, who were allegedly becoming contaminated by indigenous traits to the point where distinguishing between the groups had become difficult. The doctor essentially proposed that the medical establishment should assume responsibility for identifying the problematic portion of the nation in order to make the whole stronger.

In sum, although Flores y Troncoso wished to define race scientifically, he did not offer cultural or geographic descriptions of indigenous people. Moreover, by referencing the hereditary "remains" of native groups, he asserted that they were vestiges of the past instead of part of the nation's social fabric. Even if he was purposefully ambiguous about the political definition of indigeneity, he wished to determine which inhabitants of the federal district qualified as "pure" indigenous people. On a final note, Flores y Troncoso was not an obstetrician, but rather a general practitioner and historian. He proposed, however, that pelvimetry was the paramount tool for racial taxonomy, while he mentioned phrenology only as a last aside. As the Flores y Troncoso's writing exemplified, Porfirian scientists endorsed a medical tradition based on the theory that physical signs of inferiority marked indigenous women.

THE "SCIENTIFIC ART" AND LATE-PORFIRIAN MEDICAL PRACTICE

Having highlighted the socio-political ideology that surrounded medical notions of reproductive inadequacy, the remainder of this chapter describes how those preconceptions influenced medical practices. Manuel Barreiro's 1885 dissertation, *Oportunidad en la aplicación de forceps* (*Opportunity in the application of forceps),* formed one example.[92] Barreiro's introduction commenced with the following declaration: "it is impossible to ignore the arrival of numerous scientific rules in resolving barriers that had never even been documented before in Mexico, but whose resolution is indispensable".[93]

In a classic appeal to scientific politics, Barreiro ended his introduction with a plea: "let us analyze with level-headed judgment, let us hear the voice of the statistics, and let us try to make our National Preparatory School (ENP) take yet another step upon the scientific path".[94] These quotes essentially pointed to Manuel Barriero's support for the ascension of positivist curriculum in the ENP. As Barreiro's work demonstrated, positivism was steadily asserting ideological dominance in the obstetrical clinic.[95]

Barreiro stated three goals for his study: to patent knowledge about forceps, which he claimed had "left the shadows of science"; to identify the proper conditions for using forceps; and to declare that the application of forceps granted unique opportunities

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[92] Manuel Barreiro, *Oportunidad en la aplicación de forceps*, (Mexico City: Tip. De B. Nichols, 1885).
[93] Barreiro, *Oportunidad en la aplicación*, 7.
[94] Ibid., 11.
[95] Hale, *The Transformation of Liberalism,* 24.

for interventions in the birthing process.[96] Barreiro was certainly intrigued by the concept of "opportunities" for medical intervention, and the language he used was almost militaristic. He referred to female genitalia, for example, as "*las puertas del campo de acción" ("*the doors to the field of action"), and reminded doctors that the first door, the cervix, must be properly dilated before forceps can be applied. Barreiro emphasized that in the absence of cervical dilation, "the mother and the baby are exposed to *serious injuries and death in many cases*" of forceps use.[97]

Following his grave warnings, however, Barreiro exclaimed that forceps were "a gift to humanity" because they terminated childbirth in a "rapid and joyful manner," emphasizing the timeliness and efficiency forceps ostensibly afforded obstetricians.[98] According to Ana María Carillo's article *Nacimiento y muerte de una profesión* (The birth and death of a profession), Barreiro's emphasis on ending childbirth quickly may have been telling. In fact, Carillo's research has demonstrated that obstetricians charged up to 300 *pesos* to attend childbirth, although they were typically only present for one hour. This is striking in comparison to the midwives who, according to Carillo, charged a mere eight *pesos* for their customary 36-hour stay.[99]

The application of forceps, in Barreiro's view, essentially involved substituting human hands with an iron instrument, which he declared a relatively easy task. The necessity of the practice, in his opinion, was undisputed, but his conclusion does not

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[96] Barreiro, *Oportunidad en la aplicación*, 14.
[97] Ibid., 15. Emphasis original.
[98] Ibid., 8.
[99] Carrillo, *Nacimiento y muerte de una profesion,* 183.

appear to have been universal.[100] Although he did not mention specific sources of discontent, Barreiro referenced general controversy concerning use of the instrument. In response, Barreiro sought to establish a general rule of conduct for forceps use among obstetricians, who he claimed were reaching "the pinnacle of the science" ("*el pináculo de la ciencia*") "in saving lives". [101]

As one rationale for the use of forceps, Barreiro described "anomalies in uterine expulsive power" ("*anomalías de las fuerzas expulsivas*"), which he defined as differences in the intensity, frequency and duration of contractions. One source of uterine anomalies, according to Barreiro, was *el cansancio uterino* ("uterine fatigue"), which he claimed would result in a slow birthing process.[102] This statement directly contradicted Rodríguez's 1869 assertions about normal pauses in the birthing process because unlike Rodríguez, Barreiro did not consider pauses natural. Rather, in such circumstances he "always assumed that the uterus had arrived at a state of paralysis or exhaustion".[103]

In a perplexing contradiction, Barreiro admitted that that the uterus would often expel the baby after a pause in contractions.[104] This recognition was important, because it indicated Barreiro's knowledge that a pause in contractions did not always signify a lack of pushing power, thereby negating his rationale for the application of forceps. Instead, it appeared he is motivated to utilize scientific knowledge and technology to evolve, in a sense, beyond what he terms "nature's method" of expelling the baby, which he claimed

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[100] Barriero, *Oportunidad en la aplicación*, 9.
[101] Ibid., 10.
[102] Ibid., 18.
[103] Ibid., 19.
[104] Ibid., 50.

resulted in an unnecessary enlargement of feminine "soft parts". By declaring, "Forceps are a uterus in our hands," Barreiro conveyed his enthusiasm for the positivist emphasis on medical experimentation and intervention, which may have led obstetricians to view childbirth as an opportunity to employ male-dominated methods of scientific efficiency.[105]

Using carefully selected words, Barreiro reminded his reader that the application of forceps required a certain amount of compression, which reduced the size of the child's head. While Barreiro claimed that this "corrective" adjustment made the extraction easier for the woman's "soft parts", he again cautioned that the effects on the fetus could be fatal.[106] In chapter five of his paper, Barriero additionally conceded that the application of forceps also carried the risk of uterine rupture.[107] He claimed, however, that this was usually associated with a swelling of the infant's head, which he says could only be remedied by cranial perforation. He further theorized that a swollen head was generally caused by discrepancies between fetal cranial size and maternal pelvis size.

After discussing the "problematic" Mexican pelvis and proposing further study on the subject, Barreiro described how forceps were applied. Again, while he continued to advocate the use of forceps in the case of a "narrowed, insufficient pelvis," he presented case studies that could potentially contradict his recommendations.[108] He related, for example, that Alexander Milne, a doctor in the United States, "referred to thirteen cases

[105] Ibid., 22. Emphasis original.
[106] Ibid.,25.
[107] Ibid., 52.
[108] Ibid., 42.

of women with a narrow pelvis. All thirteen gave birth to dead infants, who were victims of forceps and craniotomy (the crushing or opening of the skull)".[109]

Despite recognizing the potential dangers presented by forceps, Barreiro insisted that the average pelvic size of Mexican women often necessitated their use.[110] Although Barreiro- unlike his later colleagues- did not yet compare the Mexican pelvis to that of European women, his statements contained an implicit national and racial logic suggesting that Mexican bodies were insufficiently proportioned. He proposed "rigorous scientific study of the pelvis," in order to identify the "problem point," or a size at which the Mexican pelvis was too small to give birth.[111] Despite his uncertainty about a pelvic "problem point," Barreiro directed obstetricians to unhesitatingly employ forceps in the case pelvic measurements between 76 and 82 centimeters.[112]

With his suggestions, Barreiro was participating in a trend documented by several scholars of the *Porfiriato*: Porfirian era Positivists were essentially anxious about the racial pedigree of Mexico, and fearful that Mexico would fall behind in the global race towards progress and evolution. Barriero and his colleagues wanted to correct the insufficiency of the Mexican pelvis, and they believed that this task could only be completed with the tools of modern science. Hinting at controversy regarding the politics of comparative anatomy in Mexico, Barreiro claimed there was an "extreme split" in the "grand debate" about the measurements of the Mexican pelvis.[113] Scientific observation

[109] Ibid., 44.
[110] Ibid., 28
[111] Ibid., 28.
[112] Ibid., 33.
[113] Ibid., 35.

and clinical experiments, he pronounced, were the only way to reach a definitive conclusion on the topic.[114] These categorizations surfaced again throughout the remaining medical publications, as positivist theories were used to rank biological differences and construct them as grave problems.

Manuel Barriero was not the only student of the ENP Obstetrical Clinic who believed that Mexican female physiology lead to problems in labor and birth. Like Barreiro, Luis Tronconis Alcalá also presented his 57-page dissertation in 1885, entitled *En los embarazos tiernos cuál es el mejor procedimiento operatorio para efectuar la desocupación de la matriz?* (*In the case of stillborn pregnancies, which is the best operating procedure to empty the uterus?).*[115] Alcalá sought to outline the variety of procedures that an obstetrician can employ in the case of miscarriage and fetal death during pregnancy or birth.

Alcalá mentioned a variety of potential reasons for miscarriage, ranging from defective sperm to syphilis. Curiously, he did not discuss causes of fetal death during the birthing process, which, as a result of Barreiro's writing, we understand to have been, at times, induced by crushing or puncturing of the skull. Another notable aspect of Alcalá's thesis was his approach to comparative anatomy: instead of focusing on pelvic bone measurements, Alcalá choose to describe the "particularities" of the "Mexican vulva".[116] Alcalá's anatomical focus shifted from the pelvic bones to the genitalia, indicating that

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114 Ibid., 38.

115 Luis Troconis Alcalá, *En los embarazos tiernos cuál es el mejor procedimiento operatorio para efectuar la desocupación de la matriz?* (Mexico City: Luis. Impr. De Díaz de León, 1885).

116 Alcalá, *En los embarazos tiernos,* 45.

his discussion of "abnormalities" and "deficiencies" was more sexualized and explicitly focused on the female reproductive organs. Alcalá claimed that the average Mexican woman's vulva measures a mere eight centimeters, and he insisted that Europeans were "better built (*conformadas*)" for labor and birth.[117]

We can see another connection between positivism and racial science in Gonzalo Páez's 1886 dissertation, entitled *Breve estudio acerca de la acción del cloroformo sobre la mujer en trabajo de parto y de sus indicaciones (Brief study on the effect of chloroform on laboring women and indications of its use).* Here, Páez presented the hypothesis that Mexican cerebral functions differed based on socio-economic status.[118] A student of the ENP, Páez authored the 37-page study as part of his general exam for the surgical and obstetrical program. Overall, his work was notable because it illuminated another aspect of medical debate about the worthiness of Mexican anatomy. Whereas earlier obstetricians described Mexican anatomy as deficient in comparison to European women, Páez's discussion focuses on class status within the nation.

The topic of Páez's work was chloroform, which is a vapor that depresses the central nervous system of a patient, thus enabling a surgeon to perform otherwise painful procedures. James Simpson first employed chloroform in 1847 as a general anesthetic for childbirth, and Páez cited Simpson's work extensively. Mexican doctors began to use chloroform shortly after its debut as an anesthetic, but the drug was eventually abandoned due to its toxicity and (often fatal) side effects, including cardiac arrhythmia and damage

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117 Ibid., 45.

118 Gonzalo Páez*, Breve estudio acerca de la acción del cloroformo sobre la mujer en trabajo de parto y de sus indicaciones,* (Mexico City: n.p., 1886).

to the liver and the kidneys.[119] During labor and birth, chloroform caused hemorrhaging, retention of the placenta, and increased tearing of the perineum (skin around the vulva).[120]

Páez, however, was reluctant to admit the dangers of the drug. He provided a list of obstetricians who believed the drug was harmful, but then accused them of "obscuring the truth", proclaiming that the debate about chloroform was one of the most "muddled" scientific debates of the period.[121] His piece, he says, was written in order to "perfectly demonstrate the complete innocence of chloroform".[122] More central to the topic of this chapter: he also sought to establish a biological rationale for chloroform's use in Mexico.

Páez theorized that birth was a reflexive action, which did not typically require cerebral participation in animal species. In fact, he compared it to an animal's involuntary evacuation of excrement.[123] "Normal labor pains," he suggested, "can be so weak that a woman can give birth without suffering, as is the case quite regularly with lower class women" *("mujeres de las clases bajas").*[124] Nevertheless, he warned that labor pains could be intense, "as is usually the case with our middle class women, and especially those in the upper class".[125] He speculated that middle and upper class women had impressionable nervous systems, giving them a sub-conscious level of sensitivity, which

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119 Páez*, Breve estudio,* 24.
120 Ibid., 24.
121 Ibid., 9.
122 Ibid., 13.
123 Ibid., 13.
124 Ibid., 14.
125 Ibid., 14.

occured at a "purely cellular level".[126] Cellular sensitivity, he said, transmitted irritation to the central cerebral receptors, where it then became a conscious pain. Páez summarized by proposing that a complicated cellular process influenced the birthing process by transforming a reflexive act into a cerebral one.[127]

Although Páez did not mention race, the distinction he made between lower, middle and upper class women likely substituted as a code for race. He essentially hypothesized that women from the "lower class" were less evolved, hence their "reflexive" (*reflejo*) brains did not interfere with the birthing process.[128] He cited a Dr. Rotterstien, who reportedly claimed that a "high level of conscious sensibility can produce pain, an accelerated pulse, nausea and vomiting. Furthermore, it can suspend the contractions and the uterus may become sterile as a result. The work does not advance; the cervix, although dilated, remains hard; the perineum presents resistance, and herein the danger begins for the woman and the child".[129] Agreeing with Rotterstien, Páez insisted that the composition of upper class women's brains produced physical changes in their bodies during the birthing process, which he presented as a rationalization for preemptive chloroform use.[130]

Gonzalo Páez claimed to have "perfectly" established the necessity of chloroform for "delicate" (*sensible)* and "hysterical" (*histérica)* women. Next, he endeavored to

126 Ibid., 14.
127 Ibid., 14.
128 Ibid., 14.
129 Ibid., 14.
130 Ibid., 14.

describe the alleged effect of chloroform on the birthing process.[131] He wrote that chloroform "travels through the blood and interacts with the cells, nullifying the protoplasmic irritability of nervous women," reiterating that the drug can destroy the "excessive nature of conscious sensitivity, thus separating instinctive from cerebral actions… chloroform suppresses the disastrous cerebral participation in the process".[132]

While Páez insisted that there was no medical consensus about chloroform's effects on labor, the majority of scientists he cited believed that the drug slowed, suspended, or even debilitated labor.133 Although he recognized these arguments and conceded that chloroform could result in death, he stated that he could offer a "better truth" about the drug.[134] The "better truth", according to Páez, reified the notion that Mexican women were biologically deficient, and therefore in need of intervention during childbirth.

Although Páez focused on middle and upper class women, even calling them "women completely devoid of bravery" (*valor*), he also stated that women of all classes required the drug when they experienced an anomaly in uterine power related to their "insufficient structure".[135] It appeared that "insufficiency" could be a "moral state" as well as a physical condition. He insisted, for example: "in a woman whose moral state is exceedingly elevated, or an indocile woman who moves constantly in her bed, who refuses to obey any orders of the doctor urging her to be quiet, who is completely deaf to

131 Ibid., 9.
132 Ibid., 15.
133 Ibid., 21.
134 Ibid., 23.
135 Ibid., 29; 25.

his warnings and orders, the use of chloroform is indispensable. Not using it, in fact, can result in grave consequences".[136]

Benito Soriano Feliberto also wrote about the use of chloroform during labor in his 1884 work *Breve estudio sobre el empleo del cloroformo en los partos naturales* (*A brief study on the use of chloroform in natural births)*. Feliberto presented a more strictly racialized argument about the effects of the drug on different "types" of women,[137] proposing that "material goods, comfortable living, and a culture of intelligence are all factors that contribute to a general sensitivity, especially upon the reproductive organs." For this reason, he asserted, "we observe that women in indigenous communities give birth without great suffering, for the absence of culture appears to dull the reproductive organs, and they submit to their ordinary biological functions." Within "the same community", he explained, one would find "women with a more developed nervous system, and it is still more present in the highest social classes."

Although Feliberto conflated race and geographic location, he made class differentiations within rural communities. Like Paéz, his work was notable for the link it proposed between mental functions ("dull", in this case) and biological functions ("reflexive"). Feliberto's piece also contained the deterministic and paternalistic trope that indigenous people "submitted" to their biological functions. Feliberto completed his practicum in the *Casa de Maternidad,* where he reportedly noticed: "the French and English women especially appear to suffer more than others, and Mexican women suffer

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[136] Ibid., 30-31.

[137] Benito Soriano Feliberto, *Breve Estudio Sobre el Empleo Del Cloroformo en Los Partos Naturales.* (Mexico City :Tipografía Literaria de Filomento Mata, 1884).

more than outsiders (*forasteras*)".[138] Although he did not specifically identify the "outsiders", he likely referred to those from indigenous communities, who came from outside of the Federal District. By separating them from the "Mexican women," Feliberto, like Flores y Troncoso, discursively excluded indigenous people from the national imaginary.

In 1887, Manuel Leal presented his research to the ENP, entitled *Taponamiento vaginal en obstetricia* (*Stemming vaginal hemorrhages in obstetrics*).[139] Like most of the other obstetricians whose publications inform this essay, Manuel Leal's work appeared to have been immensely influenced by European doctors. In fact, he dedicated the majority of his research to comparing French, German, and British methods of stemming hemorrhages.

Manuel Leal's research was particularly instructive because he offered mortality rates associated with different methods of stemming hemorrhages in three separate obstetrical clinics.[140] He reported that the average female mortality rate of the three locations was 28% of women and 62% of newborns. In addition to comparing mortality rates based on location, Leal also contrasted mortality rates associated with the various stemming methods, which were as high as 49% of mothers and 82% of newborns. [141]

Eight years after Manuel Leal's study, Alberto López Hermosa published his dissertation in 1895. Although the impact of positivism was already clear in Mexico, the

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138 Feliberto, *Breve estudio sobre el empleo del cloroformo*, 12-13.

139 Manuel Leal, *Taponamiento vaginal en obstetricia*, (Mexico City: Oficina Tip. De la Secretaría de Fomento, 1887).

140 He simply refers to the locations as "Muller, Clínica de Partos, y Maternidad".

141 Ibid., 13-15.

1890s witnessed the true political consolidation between *los científicos* and the Díaz regime. Alberto López Hermosa's work was entitled *Anomalías de las fuerzas expulsivas (Anomalies of the expulsive forces).*[142] Again, "expulsive forces" referred to uterine power, and Hermosa's study sustained the argument that the Mexican pelvis was pathologically small and therefore caused problems in the birthing process. In comparison to previous medical students, however, Hermosa attempted to define a "problem point" for Mexican pelvis measurements.[143]

Hermosa began his piece in a familiar fashion: by expressing his gratitude for transnational collaborations in obstetrics, to which he attributed the success of his study.[144] He cited more Italian and English works than did the students from the 1880s, indicating a higher level of transnational collaboration. According to Hermosa, the international community of obstetricians had "transformed a dark and hesitant practice into an exact science".[145]

Hermosa's main emphasis about the progress of "the art" was his theoretical intervention concerning pelvimetry.[146] He insisted that the pelvis had to have the correct dimensions in order to expel the child, and he suggested that 68 centimeters marked the

142 Alberto López Hermosa, *Anomalías de las fuerzas expulsivas* (Mexico City: Imp. Del Sagrado Corazón de Jesús, 1895).
143 Hermosa, *Anomalías de las fuerzas,* 4.
144 Ibid., 6.
145 Ibid., 9.
146 Ibid., 13.

point of an impossibly small pelvis.[147] "Our Mexican women" (*nuestras Mexicanas)* he proclaimed, "are often deficient in this category".[148]

Hermosa next related small pelvic size to deficits in uterine power. He theorized that the most common pathological cause of dystocia was the lack of regular or sufficient contractions, which he said were due to weak muscles and small pelvic cavities. He insisted that contractions must be energetic; intermittent for a determined period of time; well directed; regular; and use all the muscles of the uterus.[149] Echoing Páez's argument about the biological function of "delicate" women, Hermosa also proposed a connection between the pulse and the uterine contractions of "sensitive women".[150] Hermosa additionally hypothesized that "slow birth" was a dangerous process that should be accelerated with the administration of chloroform and the application of forceps.[151]

Immediately after issuing this suggestion, however, Hermosa admitted that contractions could cease and start back up again circumstantially. He gave the example of a woman whose labor he attended: she was reportedly experiencing strong, regular contractions before her sister-in-law arrived, at which point the labor ceased completely. Upon the visitor's departure, however, the contractions returned and the baby was born shortly thereafter.[152] Like most of his cohort, Hermosa vacillated confusingly between proclamations that "grave accidents" resulted from prolonged labor, and the observation

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147 Ibid., 19.
148 Ibid., 19.

150 Ibid., 14.
151 Ibid., 14.
152 Ibid., 15.

that pauses in labor were normal.[153] Hermosa even mentioned one woman who labored for ninety-eight hours without experiencing complications.[154]

Hermosa joined his colleagues in theorizing about the biological origins of anomalies in Mexican labor. In fact, Hermosa put a new spin on Paéz's theory concerning the impact of "cellular irritability" on laboring women. Hermosa suggested: "very nervous and squeamish women are predisposed to complain of labor pains, and I must concur… that this anomaly is based on a grand cellular irritability, whose core (especially in hysterical women) appears to emanate from the uterus".[155] Moreover, Hermosa cites "the violent nervous shock that can be caused by intense labor pain" as a cause of death during labor.[156]

While Paéz asserted that the cellular composition of middle and upper class women's brains transformed instinctual actions into conscious ones, Hermosa argued that women who suffered from labor pains were nervous and sometimes hysterical, causing cellular irritability which made their wombs function differently. Despite his distinct choice of words, Hermosa's argument was essentially the same as Paéz's: biological, or "cellular" variations existed among Mexican women, thus preventing some from giving birth in an instinctual manner. The duration of this argument and its role in standardizing medical interventions pointed to the strength of positivism in Mexican medical education during the Porfiriato. Meanwhile, the factual contradictions that existed among "expert"

153 Ibid., 25.
154 Ibid., 27.
155 Ibid., 22.
156 Ibid., 23.

explanations of biological differences indicated that they were not necessarily grounded in scientific truth, but rather in political arguments designed to classify human groups based on their purported biological functions and anatomical measurements.

It was ironic that obstetricians used biological arguments to insist that upper class women's brains were more evolved, while they theorized that the same cerebral evolution was the cause of uterine malfunction and even sterility. Hermosa, for example, recommended chloroform use for hysterical and disobedient women.[157] He also stated: "electricity is highly recommended in order to awaken the lethargic uterine fibers during the second phase of labor. I judge the application of continuous electrical currents quite rational".[158] Although it is unclear if Hermosa did in fact administer electric shocks during labor, he clearly emphasized medical experimentation for the sake of scientific progress. Like Barriero, Hermosa deemed forceps "precious" (*preciosos*), and stated that without the use of forceps, the "soft parts" became "flaccid".[159]

Despite his enthusiasm concerning the application of forceps, Hermosa concluded his short text with a cautionary tale. He arrived at the scene of a dead woman, who had reportedly been "mistreated" by a "careless" doctor, and her uterus ruptured as a result of the application of forceps.[160] Here, Hermosa condemned the harm done, and named the doctor responsible as if to incriminate him. Paradoxically, however, Hermosa proposed that chloroform and forceps should always be employed in cased of pelvic and

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157 Ibid., 35.
158 Ibid., 49.
159 Ibid., 54, 23.
160 Ibid., 54.

anatomical deficiencies, and he even proposed further experimentation by means of continuous electrical shock.

Beyond influencing common people's experiences in hospitals and clinics, medical debates manifested in the public sphere as well. Several of *los científicos* began their careers as journalists, and the scientific community interlinked with the media. In 1895 Agustín Ocampo wrote a newspaper article entitled "Feminine Exercise" for the newspaper *El Siglo Diez y Nueve.*[161] He connected feminine "beauty" to "perfect anatomical measurements", and proposed that exercise was one path towards physical desirability.

Ocampo apparently expected an ambiguous response to the notion that Mexican women would benefit from exercise. "In a country where civilization has not risen to a certain point," he wrote, "who would think that the feminine gender needs daily physical education? Who would think that we wish to educate our women like other nations do, making athletes out of black-eyed people?" Ocampo implicitly connected "black eyed" Mexicans to the nation's purportedly low level of civilization. As a potential solution, he proposed that "physical education," was "as important as intellectual education," and represented "a step forward in human progress".

Ocampo emphasized the particular "structure and physical circumstances (*circunstancias físicas*) of a woman." "Among girls," he wrote, "the surrounding muscles become active, and they effectively produce the development of the pelvis, which is undoubtedly the part that needs the most development." A man's development, he

161 Agustín R. Ocampo, "La Gimnástica Femenina," *El Siglo Diez y Nueve,* July 4, 1895.

asserted, "is only proper for his mission in the world and not that of a woman, whose shape should fit the following aesthetical ideal: a wide and ample pelvis, which must have a greater perimeter than the back".

Ocampo anticipated that "many readers [would] ask: Why?" In response, he answered his own question: "because the pelvic cavity is where new human beings are made- those who will be our future men and women- and the child's development always depends on the mother's conditions, favorable or not." Although he posed his piece as a recommendation for feminine exercise, in reality he echoed scientific concerns that deficient pelvic size posed a national dilemma. Like the medical literature, he suggested that working class women were more prone to pelvic deficiency. "A woman," he explained, "due to her nature, must suffer physiological functions which are incompatible with heavy labor, and in this state she will deteriorate rapidly".

Historians of the Porfiriato have proposed that the period was one of elite insecurity about the racial standing of the nation and its march towards modernity. The Porfirian liberal establishment was heavily influenced by *los científicos,* who sought to apply science to politics in the hopes of "social regeneration" for Mexico.[162] The heart of their positivist philosophy, according to Hale, was "the search for an ever-diminishing number of laws or 'general facts' of which all observable phenomena are observable cases".[163] The obstetrical publications examined in this chapter certainly adhere to the aforementioned positivist quest for scientific "laws." Obstetricians performed anatomical

[162] Hale, *The Transformation of Liberalism,* 30.
[163] Ibid., 30.

measurements in attempts to demonstrate prior conclusions: namely, that certain racial and ethnic groups were anatomically insufficient and therefore biologically inferior. This chapter demonstrates that positivism in obstetrics was a racial project, because it ideologically reified racial stereotypes and sought to delineate racial categories based on biometrics.

Scholars have shown that gender is often conceptualized in dialogue with race, and Porfirian state medicalization is a good example of such. While upper class women were seen as more delicate and therefore in need of pain control, the state designated them inappropriate subjects of medical demonstrations and experimentation, while condemning their poorer counterparts to "suffer the inconveniences" of the same.[164] This is significant because it demonstrates that Porfirian racial ideology and scientific politics influenced how a common woman experienced medical attention in public spaces.

Embracing the allegedly empirical nature of scientific politics, Mexican elites looked to comparative anatomy to racially identify their own population, essentially asserting that feminized pelvic deficiency could be corrected by masculine scientific progress. Again, race and gender constructs were interrelated, and both were in constant flux: manipulated on a federal and institutional level, elite prejudices manifested in public clinics, where the state equipped doctors to perform medical interventions embedded in a moral rhetoric about scientific progress and social evolution. The rise of positivism in Mexican obstetrics thus corresponded with shifting articulations of race, gender and science on a global level.

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[164] Cházaro, "Pariendo Instrumentos," 33.

Chapter 3:
Forced Sterilization in the Post-Revolutionary Period

"Do your children have the correct measurements (*las dimensiones naturales*)"? On Sunday May 19 of 1912, this question confronted Mexicans nationwide as they read the newspaper *El Diario*. The anonymous author of the piece chose the following subtitle: "Simple exercises to give children the proportions of ancient greek statues, which modern science declares absolutely perfect".[165]

EL DIARIO — Domingo 19 de Mayo de 1912

¿TIENEN VUESTROS HIJOS LAS DIMENSIONES NATURALES?

Ejercicios Sencillos Para Dar á los Niños las Proporciones de las Antiguas Estatuas Griegas y que la Ciencia Moderna dice son Absolutamente Perfectas

Como casi todo el mundo sabe, los ideales de belleza, gracia y fuerza se hallan representados con mayor perfección por ciertas obras maestras de la estatuaria griega antigua. Los fisiólogos, doctores, instructores atléticos y artistas de esta época

Estatua del hijo de Pirrón, por Kephisodotos, 354 B. C., en el Museo Nacional de Atenas.

Diagram 5b1

Diagrama que muestra las proporciones correctas de un niño de un año y otro de dos.

El de un año: Los números á la izquierda muestran la dimensión en medida de cabeza, para la altura; cada una es cuatro veces la dimensión de la cabeza. La escala á la derecha muestra el largo en pulgadas; los pequeños corchetes á la derecha muestran la altura de cada parte en pulgadas, en la escala; los grandes indican las proporciones de las piernas con relación á la parte superior del cuerpo.

El de dos años.—Los números son los mismos que en el primer diagrama; La altura es ya cinco veces la medida de la cabeza; las piernas tienen la proporción de cuatro á cinco con la parte superior del cuerpo.

Perfect es de tres á dos en el niño recien nacido, pero cuando ese mismo niño tiene dos años, la proporción es de cinco á cuatro; y en su edad adulta será de seis á siete.

En un niño recien nacido, las piernas son proporcionadamente muy cortas; pero la proporción de los brazos al cuerpo es la misma en todas edades. La longitud del brazo, desde el extremo del dedo de enmedio al extremo del pecho, debe ser igual á la de todo cuerpo.

Las proporciones de la cabeza también, en sus diferentes partes, también

desenvolver los brazos han desaparecido, pero podemos estar seguros de que tenían las proporciones correctas y eran muy hermosos.

Un ejemplar más perfecto del trabajo de los antiguos escultores, bajo el punto de vista de la preservación, aunque no era tan impresivo, es la estátua del Niño y el Pájaro, en la Villa Borghese, en Roma. En ella se halla todo el encanto de la infancia, como sólo los grandes escultores en los reproducción. Este niño no tiene más de tres años de edad, y tanto los padres como los escultores pueden estudiarlo con gran provecho, al que

Estátua "El Niño y El Pájaro", en la Villa Borghese, en Roma.

NUEVE EJERCICIOS PARA DAR AL NIÑO LAS PROPORCIONES CORRECTAS

Figura 1.—Primera posición, que debe tomar al comenzar cada ejercicio.

Figura 2.—Las manos sobre las caderas, volver los pies hacia dentro y hacia afuera alternadamente. Los dedos deben estar juntos, nunca separados.

Figura 3.—Doblar las rodillas, las manos sobre las caderas, los talones juntos. Después levantarse sobre la punta de los pies.

Figura 4.—Inclinar el cuerpo á la izquierda y derecha. Manos sobre las caderas. La cabeza debe seguir siempre la línea del cuerpo, según está indicado por la línea punteada. Las piernas se mantienen duras, como la pierna derecha en esta misma figura y no doblada como está la pierna izquierda.

Figura 5.—Inclinar el cuerpo hacia atrás tocando la pared con los dedos. Los brazos se mantienen duros, firmes.

Figura 6.—Inclinar el cuerpo hacia adelante, enderezándose muy lentamente. Se mantienen las piernas tan rígidas como sea posible, según se ve en la línea punteada, sin permitir que se doblen hacia atrás.

Figura 7.—Movimientos de los brazos. 1, manos sobre los hombros; 2, brazos hacia afuera; 3, manos sobre los hombros; 4, brazos horizontales; 5, manos sobre los hombros; 6, brazos hacia arriba; 7, manos sobre los hombros; 8, posición del primer grabado, brazos á los lados.

Figura 8.—Talones juntos, puntas de los pies separadas; levantar los ligeramente los brazos, respirando hondo.

Figura 9.—La cabeza hacia adelante y hacia atrás; Manos sobre las caderas, los talones juntos.

acostarán demasiado pronto. Todos estos males tienen como consecuencia otros muy serios en su efecto sobre

165 "Ejercicios sencillos para dar á los niños las proporciones de las antiguas estatuas griegas y que la ciencia moderna dice son absolutamente perfectas," *El Diario*, May 19, 1912.

The piece began with the following proclamation:

> Physiologists, scientists, doctors, instructors of physical education, and artists all agree that the most perfect men and women are those whose bodies, heads and limbs come close to the measurements of ancient Greek statues.

The article touched on three themes that relate to this chapter: a racialized focus on the body as emblematic of hereditary worth; the presence of gendered criteria for anatomical desirability; and the assertion of modern science's legitimacy in the public domain. On the first point, the link between "correct" dimensions and "ancient Greek measurements" discursively naturalized European bodies, suggesting that others embodied unnatural, and even pathological, deviances from the norm. In relation to gender, the author placed a familiar emphasis on the importance of pelvic width to beauty. As a manner of judging "the loveliness of the figure," the article suggested that "the widest point of the pelvis should be taken as the main reference point" in order to determine the "perfection of the shape".

The declaration that modern science held an authoritative definition of beauty (which is a subjective, imprecise, and even philosophical personal concept) was a manifestation of racial science in the public eye. It also suggested that the media played a role in legitimizing medical practices such as comparative biometrics. Finally, and returning to the title, the presence of a pointed question about the potential deficiencies of "*your* children"[166] helped to create a source of anxiety for adults about Mexico's future, and raised questions about national identity in a moment of revolution.

[166] Emphasis mine, in reference to the headline "Do your children have the correct measurements?"

The Mexican Revolution overthrew Porfirio Díaz's dictatorship in 1911, and several decades of political turmoil and transformation followed. In the medical establishment, however, the Porfirian legacy remained largely unaltered. This chapter examines post-revolutionary obstetrical literature in order to demonstrate the lasting impact of scientific politics on gender science, which linked with notions of class and race-based pathologies.

This chapter focuses on the writings of post-revolutionary doctors who sterilized women they saw as hereditarily unfit. In the process, it demonstrates that the post-revolutionary medical establishment adopted Porfirian articulations of biological worth and attempted to assert control over female reproductive capacity in the interests of secular morality, economic productivity, and racial regeneration. This study adds to a growing body of scholarship in suggesting that the 1910 revolutionary watershed is somewhat of a political and historiographical illusion. In this case, the proof for this claim is that post-revolutionary scientists, bolstered by international eugenic reforms, took Porfirian prejudices to their extreme conclusions by removing the organs that, in previous generations, they only sought to reform.

The question "Does your child have the correct measurements?" appeared hyperbolic and even satirical. Yet, secondary sources have indicated that Mexican children in public schools were indeed subject to the measurements depicted above. In her article *Responsible Mothers and Normal Children: Eugenics, Nationalism, and Welfare in Postrevolutionary Mexico, 1920–1940,* Alexandra Minna Stern explained that,

> Throughout the 1920s and 1930s classrooms became laboratories for the measuring, classifying, and tracking of children. Implemented mainly by eugenicists, anthropometrics and psychometrics became the privileged practices for discerning normal from abnormal, distinctions that might lead to other medicalized arenas such as the juvenile court, mental asylum, or correctional home.[167]

By the 1880s Francis Galton (1822-1911) had coined the term "eugenics", which he defined as "the science of improving the stock,"[168] and proponents of eugenics drew from Social Darwinism and formulated allegedly scientific criteria that claimed to measure hereditary worth. Although eugenic campaigns did not always or exclusively target people of color, as a whole eugenics was racialized in ways that varied depending on national, regional and local conceptualizations of race.[169] Social and scientific notions of race were thus central to eugenic projects worldwide, and racial debates factored into Mexican eugenics as well.

In the case of Mexican eugenics, for example, Patience Schell has shown that "debates about race were part of the new post-revolutionary nationalism and a national debate about the meaning of being Mexican".[170] Although Latin American countries generally implemented more positive eugenic legislation than negative, Schell has demonstrated that "there were still negative eugenic ideas in circulation among influential

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167 Alexandra Minna Stern, "Responsible Mothers and Normal Children: Eugenics, Nationalism, and Welfare in Postrevolutionary Mexico, 1920–1940," *Journal of Historical Sociology* 12; 4, (1999), 371.

168 Marius Turda, "Race, Science and Eugenics in the Twentieth Century," in *Oxford Handbook of Global Eugenics,* ed. Alison Bashford and Philippa Levine, (Oxford: 2011), 64.

169 That eugenics was a racial project is a controversial claim, and some scholars of eugenics would disagree. However, most historians who have recently written about eugenics agree that it was racialized.

170 Patience Schell, "Eugenics Policy and Practice in Cuba, Puerto Rico, and Mexico," in *Oxford Handbook of Global Eugenics,* ed. Alison Bashford and Philippa Levine, (Oxford: 2011), 487.

Mexicans".[171] Examples of negative eugenics in Mexico included the "state supported 'whitening' of the indigenous population" and "the forced sterilization of criminals".[172] Both of these political/medical projects drew support at the first Mexican Congress of the Child, held in Mexico City in 1921.[173]

Racial politics were complex in post-revolutionary Mexico. Although prominent thinkers such as Manuel Gamio proposed that indigenous people could be identified based on cultural- and not somatic- criteria, biological racism in the post-revolutionary period was more tenacious than some might think.[174] Alan Knight, as we saw in the introduction, has stressed that even the emphasis on creating *mestizos* through cultural assimilation devalued indigenous people and expressed the hope that their identities would fade from the national landscape.

This chapter will demonstrate that the medical establishment largely rejected Gamio's notion of racial betterment through cultural assimilation. Like Porfirians, post-revolutionary doctors embraced hereditarianism, but the latter group followed the trajectory of biological determinism into eugenics. This chapter indicates that the post-revolutionary medical establishment saw culture as a static entity that was ingrained in a person's biological make-up. Thus, in their view, cultural and moral deficits were symptomatic of a flawed heredity that could not be cured, but rather had to be eliminated.

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171 Ibid., 486.
172 Ibid., 485.
173 Ibid., 485.
174 Ibid., 488.

Questions of gender and sexuality were fundamentally connected to eugenic ideology and practice. Again, "gender" refers to the construction and performance of masculinity and femininity, as well as the analytical lens associated with "gendered" projects that targeted either women or men. In the *Oxford Handbook of Global Eugenics*, Alexandra Stern argued that gender and sexuality are "two of the most illuminating lenses through which we can productively explore the global history of eugenics", because "from its beginnings in the late nineteenth-century, eugenics was intimately entangled with reproduction, sex, the family, as well as human physiology and form".[175]

Eugenic legislation in many parts of the world aimed to sterilize "feeble-minded women," who were seen as "dangerous" because they could "destroy the lives of respectable married men and, if not spatially contained or surgically fixed, spawn defective progeny".[176] While male sexual exploits were thought to be gender-appropriate, "feeble-minded" women were treated as mere breeders, moral deviants and a potential threat to the patriarchal family. In this way, Stern has aptly observed that eugenics was often used to reify "essentialist meanings of motherhood and womanhood".[177]

Maternity and gender were also central themes in Mexican eugenics. As Patience Schell has illustrated, Mexican eugenicists saw men as "little more than inseminators," while women's reproductive choices were a state affair, because their bodies could either contribute to national development or produce costly threats to economic progress and modernization. Eugenics in Mexico revolved around the science of puériculture, which

[175] Alexandra Minna Stern, "Gender and Sexuality: A Global Tour and Compass," in *Oxford Handbook of Global Eugenics,* ed. Alison Bashford and Philippa Levine, (Oxford: 2011), 173.
[176] Ibid., 177.
[177] Ibid., 178.

refered to the mother-child unit and included three medical specialties: obstetrics, gynecology and pediatrics. As Nancy Stepan explained in *The Hour of Eugenics*, puériculture made children "biological-political resources of the nation,"[178] and not coincidentally, the Mexican Eugenics Society for the Improvement of Race came into being "as a direct offshoot of the earlier Mexican Society of Puériculture".[179] In accordance, this chapter demonstrates that Porfirian puériculture was, in many ways, the institutional and ideological precursor to Mexican eugenics.

Finally, this chapter investigates the confluence of biometrics (especially pelvimetry) and eugenics in Mexico between 1915 and 1936. In the process, it illuminates how the medical establishment saw female sexuality and indigenous reproduction in relation to the construction of a new state. Mexican doctors were certainly not the first (or the only) elites with concerns about women, gender and progress. Philippa Levine has shown that nineteenth-century scientists viewed women as anti-modern, because they were allegedly "possessed of lesser cranial capacity and therefore a less deep intelligence" and "like savages, they were also by nature less attuned to and appreciative of the benefits of progress".[180]

In Mexico, Porfirian medicine created an ideological legacy about immoral women with defective biology, whose only hope for improvement lay in the hands of scientific medicine. This chapter demonstrates that the post-revolutionary medical establishment embraced and furthered this legacy, but it is important to note that the post-

[178] Stepan, *The Hour of Eugenics,* 78.
[179] Ibid., 81.
[180] Philippa Levine, "Anthropology, Colonialism and Eugenics," in *Oxford Handbook of Global Eugenics,* ed. Alison Bashford and Philippa Levine, (Oxford: 2011) 54.

revolutionary sterilizations did not represent a simple continuation of Porfirian science. Rather, post-revolutionary doctors acted in the context of a global debate about eugenics by sterilizing public patients. The scientific emphasis on pelvic deficiency as a rational for forced sterilization in Mexico was notable because it was not a common eugenic trope worldwide. It also indicated a major point of continuity with Porfirian clinical practice.

Chapter three employs the same methodology as chapter two: it examines scientific literature written by medical students and their professors in post-revolutionary Mexico. The first is a quantitative study from 1917 that described gynecological operations in Mexico City's General Hospital. The middle of the chapter provides a close reading of Gustavo Adolfo Trangay's piece from 1931, entitled *Responsible Maternity and the Clinic,* which was a proposal for a eugenic sterilization campaign in Mexico. The last section of this chapter examines the major post-revolutionary studies of Mexico's alleged "pelvic deficiency vice".

SARA RODRÍGUEZ AND THE "INFANTILE-TYPE" PELVIS

Some post-revolutionary doctors were influenced by Porfirian practices because they received their medical training during the Porfiriato. Such is the case for Juan Duque de Estrada, who attended medical school in the mid-1890s and became an important professor in the post-revolutionary obstetrical clinic. Between 1897 and 1919, Duque de Estrada published at least nine studies (totaling over 300 pages) on the prevalence of the

"infantile-type" pelvis in Mexico, which bore great resemblance to the "faulty" pelvis that Flores y Troncoso described in 1888.[181]

Duque de Estrada's research began in a maternity clinic in Mexico City, where he first worked as a student intern and then a practitioner after earning his degree. Upon observing women with "infantile pelvises" and "retarded pelvic development", Duque de Estrada began to perform autopsies in order to further the science of pelvimetry. His findings eventually formed a main part of the medical school's curriculum, and as a result he became the head professor of the obstetrical clinic and oversaw student training there for 30 years.

In 1917, Duque de Estrada published an article entitled *Mexican pelvimetry: Description of an infantile-type pelvis. Summary of a lecture I gave in the Obstetrical Clinic regarding Sara Rodríguez.*[182] "Sara Rodríguez," wrote Duque de Estrada, "was a tiny woman (*una mujercilla*), who was infantile, and of incomplete development". The author included a picture of Sara in his article.

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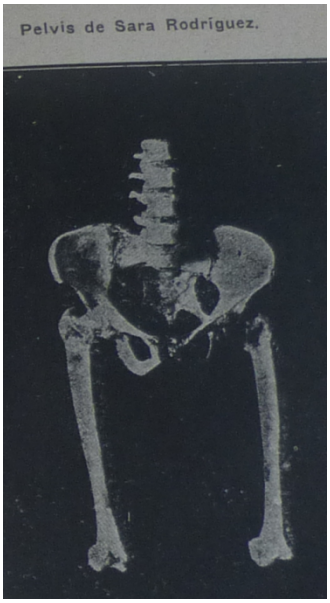
[181] Antonio Sordo Noriega, *Estudios obstétricos del profesor Doctor D. Juan Duque de Estrada, publicados de 1897 a 1919,* (Mexico City: Imprente Mercevia, 1955).

[182] Juan Duque de Estrada, *Pelviología Mexicana: descripción de una pelvis infundibuliforme de tipo infantil. Resumen de las lecciones que con motivo de Sara Rodríguez, dí en la catedra de clínica de obstetricia,* (Mexico City: n.p., 1917).

Sara was 25 years old when Duque de Estrada photographed her, and she had already carried two pregnancies to term. “With the first child,” the professor noted, “doctors employed chloroform and used forceps to extract the infant. When she awoke and asked to see her baby, they told her that it was very large and they were forced to extract it dead”. In a regretful tone, Duque de Estrada recounted that Sara experienced the same outcome while attempting to birth her second child. “In 1916,” he wrote, “she returned to the hospital for a third time. She only wished to leave with what she had twice been denied: a live child”.[183]

[183] Duque de Estrada, *Pelviología Mexicana,* 22.

Although Sara visited the General Hospital for her first two pregnancies, in 1916 she became a patient at the maternity clinic, where Juan Duque de Estrada elected to perform a cesarean section to extract the child. Sara passed away during the procedure along with her third child, and Duque de Estrada conducted an autopsy in order to study her pelvis (Figure 2). Upon investigation, Duque de Estrada found that Sara's "pelvic cavity was inclined downward," and she also had a "backward slanting spine" (*desviación vertebral*).[184]



Duque de Estrada concluded that Sara's skeletal structure was not only developmentally retarded, but also slanted in a downward and backward manner. Moreover, he asserted that Sara's physique was pathologically small and classically

[184] Ibid., 22.

infantile, and he pointed to her "underdeveloped vagina and vulva" as evidence.[185] Sara's figure, according to Duque de Estrada, was underdeveloped and weak, and even her spine pointed in a rearward direction. In short, her biological inheritance rebelled against progress and symbolized a stumbling block in the nation's halting march towards modernity.

Duque De Estrada insisted that cesarean sections should be performed on women who displayed signs of pelvic deficiency, despite that fact that the procedure usually resulted in maternal death.[186] The patients sometimes survived, however, and on December 6 of 1915, Duque De Estrada successfully operated on Consuelo Gutiérrez, a 23 year-old factory worker from Mexico City. Duque de Estrada observed that his patient appeared healthy, but only measured 129 centimeters tall. Citing that short stature was a primary indicator of a small pelvis, the doctor decided to "substitute the scientific art for nature's methods, and [he] proceeded to extract the child".[187]

"When the fetus died and Consuelo lived", Duque de Estrada wrote, "The question arose: What's next? Hysterectomy?" He continued, "At this point our task is to create very detailed studies and proceed carefully. For now, we must set preconceived ideas to one side and maintain clinical professionalism".[188] Although it is difficult to know for sure, Duque de Estrada appeared to ponder whether he could justify performing hysterectomies on women with petite pelvises. He additionally implied that the "detailed

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[185] Ibid., 25-27.
[186] Duque de Estrada himself reported that they usually resulted in death in his aforementioned article *Pelviología Mexicana.*
[187] Juan Duque de Estrada, *Pelvis infundibuliformes Mexicanas: continuación de los estudios sobre la pelvilogía Mexicana hechos por el Dr. Duque de Estrada,* (Mexico City: n.p. 1916), 8.
[188] Duque de Estrada, *Pelvis infundibuliformes Mexicanas,* 8.

studies" would demonstrate that hysterectomy was necessary for women like Sara Rodríguez and Consuelo Gutiérrez.

Duque de Estrada thus revealed that as early as 1916, decades before eugenics reached its height in Mexico, doctors were questioning whether "infantile" women should continue to reproduce, despite the difficulties they allegedly experienced in doing so. Although it is impossible to know for sure, the women who appear in the next study may have resembled Sara, and their practitioners may have experienced the same moment of uncertainty that Duque de Estrada reported when he waivered on the verge of rendering Consuelo Gutiérrez sterile. Somewhat strikingly, the doctors in Mexico City's General Hospital did not appear to hesitate much when faced with the same situation.

"PRIMITIVE UTERINE PLACEMENT" IN THE GENERAL HOSPITAL, 1916-1917

In 1917, Francisco Ortega Fuentes authored an extensive quantitative study entitled *Dieciséis meses de observaciones en un servicio de ginecología* (*Sixteen months of observations in gynecological practice*).[189] In the introduction to his work, Fuentes reported that he did not experience a "single moment of hesitation" in selecting a topic of study. "My spirit has been profoundly impressed," he explained, "by the frequency of problems that occur with women's genital organs, which are of such importance to her being as a whole".[190]

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[189] Francisco Ortega Fuentes, *Dieciséis meses de observaciones en un servicio de ginecologia*, (Mexico City: UNAM Facultad de Medicina, 1917).
[190] Fuentes, *Dieciséis meses de observaciones,* 3.

The number of gynecological operations that occurred in the General Hospital may have profoundly impressed any observer. Between January 1916 and March 1917, 309 patients were admitted to the clinic, and 207 underwent surgery during their stay. Of the 207 operations performed, 105 involved some form of hysterectomy (removal of the uterus). At least six other women received a salpingectomy (elimination of the fallopian tubes), and 3 underwent an ovariotomy (extraction of the ovaries). Furthermore, nine experienced annexations of the uterus (a form of partial hysterectomy), and 56 endured a colpectomy (a partial or complete surgical excision of the vagina).[191] In sum, 57% of the women received an operation that rendered them sterile.

Who were these patients, and why did doctors perform the operations listed above? Due to the high frequency of hysterectomies, one might assume that Fuentes' research was based on a specialty ward that served women with severe gynecological issues, but this was not the case. The women were not of advanced age: approximately two-thirds were between 20 and 35 years, and the rest were in their teens or over 40. The ward was located in the General Hospital, which was not a specialty clinic for patients with specific ailments. Furthermore, it was the routine destination for women who had given birth in the obstetrical ward.

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[191] I took all figures directly from Fuentes' summary of his own data, found on pages 15-16 of his study. At the end of his thesis is a chart detailing the 309 women's individual cases, and Fuente's numerical summary seems consistent with the data he gathered. Fuente's breakdown of individual surgeries was as follows: Histerectomía subtotal abdominal: 8; Histerectomía subtotal vaginal: 2; Histerectomía total abdominal: 19; Histerectomía total vaginal: 60; Histerectomía total mixta: 16; Dilatación y raspa: 51; Colpoperineorrafias, 56 casos; Traquelorrafias: 13 casos; Uretero-entero-anastomosis, 8 casos; Míomectomía: 1 caso. Although Fuentes did not include them in his summary, his chart also records the performance of ovariotomies, laparotomies, and other kinds of surgery. Like Fuentes, however, I have chosen to highlight the most common surgeries performed.

The unit admitted patients for a variety of reasons, including general health problems such as appendicitis. The most common conditions that Fuentes recorded were genital warts, kidney pain, and vulvitis (inflammation caused by allergens or other irritants such as yeast). Fuentes also listed patients who reported no health problems and left the hospital without treatment. He explicitly stated that the gynecological ward admitted a total of 309 women during the 16-month period, thus his data did not focus exclusively on the problem cases. In other words, the evidence strongly suggests that Fuentes based his observations on an ordinary group of patients.

The primary rationale for surgical intervention was the presence of a "backward-slanted uterus" (*retrodesviación del útero*), and Fuentes reported that 156 of the 309 women were affected. [192] Concerns about tilted or out-of-place uteri were common in nineteenth and early twentieth century gynecology, and the condition was associated with hysteria. In accordance with other gynecologists, Fuentes attributed hysteria to uterine tilts, and he proposed that hysterectomy should be performed "as soon as a uterine tilt was diagnosed". He did mention, however, that the condition was not painful and there was no medical consensus concerning its proper treatment.[193]

Apart from hysteria, Fuentes worried that a tilted uterus might inhibit the elimination of menstrual fluid, which he believed would cause "self-poisoning, due to the fact that menstrual fluid is toxic".[194] His comments were typical of mainstream gynecological theories at the time: he emphasized that women's reproductive functions

[192] Ibid., 40.
[193] Ibid., 40.
[194] Ibid., 24.

influenced their mindset and moral compass, and proposed that hysterectomy was an appropriate solution for mental and emotional problems. Like Porfirian doctors, he believed that female reproductive anatomy was pathological by definition. He stated, for example, "The pathology of female genitalia is excessively varied, which is usually caused by the anatomy and physiology of the organs themselves".[195]

Apart from commonplace notions about female pathology, Fuentes' writings indicated that the diagnosis and treatment of uterine tilts became racialized in Mexico. First, he equated one variety of problematic uterine placement as a "primitive state," and he reported that a common type of uterine tilt was a "primitive backward slant" (*retrodesviación primitiva*).[196] Of the 105 hysterectomies that he reported, 31 were performed on women with a "primitively located uterus".[197] Second, he placed a familiar emphasis on pelvic deficiency when discussing the origins of a "primitively placed uterus". The foremost "debilitating influence on uterine suspension" was, according to Fuentes, "subnormal pelvic amplitude".[198]

In his discussion of uterine tilts, Fuentes' use of the word "*desviación*" (*backward-slant*) was noticeable. In 1888, Flores y Troncoso asserted that "the pubis of indigenous women is higher than in the women of any other race, and it is characterized by a very notable downward and backward inclination".[199] Considering that Fuentes' training was based on almost four decades of consensus that indigenous women's

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[195] Ibid., 36.
[196] Ibid., 213; 40.
[197] Ibid., 13.
[198] Ibid, 26.
[199] Flores y Troncoso, *La Historia de Medicina,* 745.

"backward" pelvic cavities were "too high," "too narrow," and "too slanted" to function properly, he probably considered it logical that, in such a pelvis, the uterus would be placed in a "primitive" and "rearward-tilting" manner as well.

In 1888, Flores y Troncoso theorized that pelvic deficiency influenced the structure of the entire birth canal and its surrounding tissue. Like his Porfirian predecessors, Fuentes was also concerned about the presence of undersized "soft parts," which were allegedly unable to stretch sufficiently during childbirth. Thus, he theorized that uterine tilts could provoke "*desgarros"* ("rips," or lacerations of the vulva that resulted from childbirth). Likewise, he proposed that a skin laceration could contribute to the development of a backward slant. In fact, 63 of the women who received operations reportedly suffered perennial skin lacerations while giving birth.[200]

For example, in November 1917, Fuentes added "D.R.C.", a 28-year old patient, to his chart. D.R.C. was diagnosed with two conditions (a perennial laceration and inflammation of the vulva), but no others. On November 9, D.R.C. underwent a lengthy operation with the aid of chloroform. The operation consisted of cervical dilation (*dilatación*), intra-cavity uterine rasp (*raspa*), and double salpingectomy (*salpingectomía doble*, or the removal of both fallopian tubes). Her chart did not indicate why the removal of her fallopian tubes was necessary to treat the skin laceration.[201]

Fuentes recounted 181 operations that resulted in sterilization, whose rationales appeared to be largely based on notions of deficient anatomy or faulty biology. Fuentes'

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[200] Fuentes, *Dieciséis meses de observaciones,* 26.
[201] Fuentes did not provide the full name of D.R.C., just the abbreviation.

study, therefore, contained useful information about the types of procedures that occurred in public hospitals and some of the discourse surrounding them, and as such, it can be seen as a conduit linking Porfirian medical practices to the subsequent era. In light of the hysterectomies that Fuentes described, it is not surprising that the next generation of medical students would offer "pelvic deficiency" as one of the principal scientific rationales for obligatory sterilization.

"RESPONSIBLE MATERNITY AND THE CLINIC," 1931

Gustavo Adolfo Trangay was completing his medical training in 1931, just as Juan Duque de Estrada was nearing the end of his tenure as head professor of the Obstetrical Clinic. Upon graduation, Trangay presented a dissertation entitled *Responsible maternity and the clinic*, in which he offered a plan for the enactment of a eugenic sterilization campaign in Mexico. Trangay was not the only student to use his academic work to make a political statement. In fact, in the 1930s a number of Mexican medical students dedicated their careers to advocating for eugenic reforms.[202]

To begin, Trangay offered the following case as an example that united the elements of his argument, and thus it is worth revisiting in full:

> The woman was of a humble class and in pathologically deplorable conditions. At the hour of childbirth, abdominal cesarean was the only consideration, because given her excessively small pelvic measurements she could not possibly attempt a spontaneous birth. After successfully performing the operation and before closing her uterus, in the most natural of manners

[202] See, for example: Alfonso Mejia Schroeder, *De la esterilidad femenina: su etiología,* (Mexico City: Imprenta Mundial, 1935) and Jacinto Rojas Domínguez, *Esterilización humana*, Mexico City: n.p., 1934). Due to limited space, I chose to focus on Trangay's work.

> and with the understanding that the other doctors present were to remain silent, we proceeded to tie her tubes. It was a true professional sacrament, as plenty could be said about why Mother Nature permitted a vital organ to such a miserable life. We believe that neither moralists, nor prudes, nor demanding sociologists can deny that to have done anything else in this case would have been to tacitly accept abortion, or to expose the woman in question to the risks of another cesarean. In other words, to do anything else would have been absolute medical negligence. And what we have explained about this concrete case is completely applicable to the one before it and all similar cases. In every single one, sterilization is truly necessary.[203]

Gustavo Trangay's argument was consistent with eugenic thought, because he viewed social behavior as linked to inherited traits, and he believed that some individuals presented economic, cultural, or biological threats to the nation. Furthermore, he proposed that the medical establishment was the ideal institution to protect state interests, and that doctors had a sacred duty to do so. Trangay's work consisted of five relevant themes: the value of scientific control over female sexuality; knowledge of a secular morality that could correct rural backwardness;the conviction that irresponsible reproduction posed a threat to economic productivity; the importance of racial regeneration in Mexico, and finally, the medical establishment's opposition to federal legislation that disallowed forced sterilization.

Trangay believed that a reduction in the birth rates of working class Mexicans would benefit the nation, especially when combined with the endorsement of births that would allegedly improve Mexico's racial composition. It was evident that Trangay targeted women with small pelvises as candidates for cesarean sections, which consequently allowed him to perform sterilizing operations. This was significant because

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[203] Trangay, *La maternidad consciente y la clínica*, 24.

Trangay and his companions evoked nineteenth century rhetoric concerning anatomical deficiency in order to claim that their patients could not successfully give birth without scientific intervention. Furthermore, Trangay's focus on pelvimetry also suggested that, within clinic walls, Mexican eugenicists targeted indigenous women or those with supposedly indigenous traits.

Trangay was clearly interested in drawing connections between obstetrical research and social policies. The very title of his piece ("Responsible *maternity* and the clinic") emphasized his focus on maternity, and not childbirth, although he stressed the link between responsible motherhood and clinical surgery. Trangay focused explicitly on women, and he wished for scientific control over maternity, but not paternity or a combination of the two. For example, he asserted that, "rural Mexican women are giving birth like beasts, and so our cohort presents a plan for female sterilization".[204]

It is important to note that Trangay explicitly rejected the idea of male sterilization, hence his proposal construed the female body as the most important venue for the enactment of scientific solutions for social problems. Furthermore, his writing reified gendered expectations that encouraged male promiscuity while condemning female licentiousness. He suggested, for example, that if a single woman requested contraceptives in order to "live her life like a young man," the doctor in question "should

[204] Ibid.,, 32.

recommend chastity as the only recourse."[205] On the other hand, he gave "Man *(El hombre*)," permission to be "pure sex (*puro sexo*)*"* without repercussion.[206]

The fact that Trangay referred to women who requested contraceptives indicated that many individuals, not surprisingly, wished for control over their reproductive functions. In the name of gendered sexual mores, Trangay rejected the idea that single women should be able to avoid the consequences of intercourse. Yet, what about married women who asked doctors to assist them in avoiding pregnancy?

Trangay insisted that sterilization be performed only in the interest of scientific medicine and never for the purposes of birth control. Furthermore, he opposed the notion of voluntary sterilization, and stated: "we must never sterilize a woman solely on her whim".[207] Trangay recognized, however, "a contradiction" in his proposal, because he "accepted, as indisputable, the right of all women to be or not to be a mother." "Yes," he continued, "we have accepted this right as indisputable, but now is the opportunity to declare that Medical Science *(la Ciencia Médica)* should not be at the unconditional service of this right".[208]

In other words, Trangay's comments reflected the notion that women should cast aside the desire to manage their reproductive faculties for the greater good of state interests, and that scientific medicine should prevent certain people from procreating while requiring others to do the same. In his view, the problem was not so much that

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205 Ibid., 47
206 Ibid., 43.
207 Ibid., 70-71.
208 Ibid., 44.

certain women were having too *many* children, but rather that they were breeding in the first place. For this reason, Trangay did not place much stock in birth control. On the contrary, he only supported permanent operations such as hysterectomy and the removal of fallopian tubes. In a sarcastic tone, Trangay rejected the idea that lower-class Mexicans could be trusted to use contraceptives, and suggested that it was "not even possible to consider" their use.[209]

Trangay claimed that a scientific brand of secular morality legitimized his authority, which he constructed in opposition to the Church.[210] He declared:

> Religion has always been the most powerful enemy of Science, and that which has most impeded its evolution. Now, it is perfectly understandable that the brainwashed masses would sacrifice their vitality and their well being in order to honor the prejudices of a conventional morality and unfounded religious precepts. But it is inexplicable that these prejudices and precepts could be capable of impacting those who, due to their knowledge, are obligated to resolve problems that profoundly affect the vitality of the community. If doctors possess scientific knowledge, like the laws of inheritance, with which to legitimately impede the birth of children to sick parents; if doctors rightfully take charge, helping to inhibit the birth of infants to homes that are economically unstable; if doctors were permitted to do their work well, they would help avoid the advent of sick individuals who are incapable of the struggle for life. Indeed, it is ultimately the healthy and capable that society must support. Those doctors, in sum, would act in agreement with Morality, because Morality is the science of well being.[211]

Trangay believed that the state should assume the right to control reproduction, and certainly not yield authority to women who sought birth control via sterilization. Yet, he also proposed that the state should wield its power against catholic breeding habits. Trangay's portrayal of the Church's influence on rural communities was notable, because

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209 Trangay, *Maternidad consciente,* 43.

210 Ibid., 4.

211 Ibid., 50. Capital "M" on "Morality" in the original.

he characterized the Church as "a conventional morality" with "unfounded" "prejudices and precepts" that deceived "the brainwashed masses". Although Trangay declared altruistic concern for "the masses," his comments also conveyed a paternalistic brand of pity and disdain for their alleged ignorance, superstition and susceptibility to the Church's manipulation.

Seen in this light, Trangay's remarks were a judgment about cultural backwardness in rural areas, which many elites perceived as an impediment to modernization efforts.[212] His comments were also likely an attempt to capitalize on federal anti-clericalism, and his concern for the rural multitudes aimed to legitimize the claims of "scientific medicine" over family planning and sex education in rural communities. Not coincidentally, these were practices that the Church strongly opposed.

Trangay insisted that eugenic sterilization would benefit the nation economically. "The state", he wrote, "could not possibly provide adequate support for the poor women in this country" because they "become pregnant again at delivery" (*se embarazan con el parto)*.[213] Identifying himself as a "serious doctor," he contended: "as if professional morality condemned the realization of such a truly moral end: to exterminate misery and limit the number of beggars and thieves in incubation."[214] Trangay's reference to the "incubation" of lower-class criminals was notable, because it suggested that criminality and poverty were innate character traits, and not learned behaviors. Although he

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212 On Post-revolutionary politics, see Mary Kay Vaughn, *Cultural Politics in Revolution: Teachers, Peasants, and Schools in Mexico, 1930-1940,* (Tucson: University of Arizona Press, 1997).
213 Trangay reported that his professor said this in class and that it was a topic of frequent conversation.
214 Ibid., 16.

socioeconomics was a central theme of his argument, he extended the definition of an "irresponsible mother" not only to "our lower class women," but also to "many of our middle class ones".[215]

Trangay expressed opposition to federal legislation that prohibited doctors from performing surgical sterilization. According to articles 949 and 955 of the Penal Code, "sterilization aimed to limit childbearing" was punishable by up to "twelve years in prison and a fine for the first offense."[216] In response, he decried:

> It is of no importance to the state that deformed individuals are born, sick individuals; that society experiences an increase in inept units (*unidades ineptas*) which the healthy part then must support. Yet, according to the application of the laws cited, our knowledge is of no use whatsoever.[217]

Trangay believed that the legislation prevented doctors from fulfilling their professional and moral duties. Yet, his demands on the government were sometimes unclear. For example, while he insisted that "the state should not interfere in these matters", he also advocated state-sanctioned eugenic policies because, in his opinion, "the responsibility of a government is to protect collective interests".[218] By arguing that the operations were medically necessary, Trangay declared his lawful right to effect sterilizations without legal consequences. "Although done deliberately," he explained, "we do not believe that sterilization should be punishable when it ultimately prevents a greater problem that implies the permanent annihilation of reproductive functions."[219]

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215 Ibid., 10.
216 Ibid., 55-56.
217 Ibid., 56.
218 Ibid., 28, citing his instructor, Dr. Torruella professor of Pediatrics.
219 Ibid., 51.

Notably, he insisted that cesarean sections carried such a high risk of death or injury that they implied the permanent annihilation of reproductive functions and, thus, that sterilization was plainly justified for those who were allegedly unable to have a vaginal birth.

Throughout his work Trangay wrote with the plural "we" (*nosotros*), indicating that he acted within a group. He also referred to his "cohort," who reportedly "had to resort to clandestine sterilizations due to state inaction".[220] Given that he was a medical student at the time of his writing, he presumably acted under the supervision of professors, practitioners, or both. Although Trangay clearly assumed the stance that doctors should mandate forced sterilization, it is unlikely that he was the agent pressuring his supervisors into allowing or performing the surgeries. On the contrary, he probably acted under their direction, and the references to his professors' lectures confirmed that eugenics was a significant topic of discussion in both classrooms and clinics during his time as a student of medicine. Because obstetricians had access to women's bodies and the ability to reshape- or remove- their reproductive organs, the ideological debates that occurred during Trangay's medical training were also matters that affected common people's lives in Mexico City, if not throughout the nation.

Trangay sought a legislative loophole that could theoretically help his cohort evade the law. "The article that banned sterilization", he explained, "speaks of an operation that is 'completely unnecessary': unnecessary for the individual's health, for their well-being, or what exactly?" He continued: "a doctor who sterilized a woman

[220] Ibid., 51.

suffering from an ailment incompatible with reproductive functions would perform a necessary operation for that woman. A doctor who sterilized a woman who already had the number of children she could support and educate would perform a necessary and beneficial operation for the economic well-being of that woman".[221] In cases such as these, he explained, "we believe that sterilization would be the only effective route" and for that reason, "necessary sterilization, with which we baptize it from the juridical viewpoint… remains plainly justified".[222]

Underlying Trangay's work were Social Darwinist theories concerning biological worth and the hierarchical classifications of human "races". He stressed his belief that the "hard laws" of heredity should constitute a moral authority above the state, the Church, and individual autonomy. Furthermore, he advocated sterilization for those "incapable of the struggle for life," and he listed a number of circumstantial, behavioral, and physical characteristics that supposedly identified such a person. To begin the list, he asserted: "the doctor's actions should always combat or prevent social ills *(males sociales)* or ailments that have no other humane solution- for example, sterilization for undisputable pelvic narrowness."[223]

Thus, Trangay's proposal rested heavily on eugenic theories of racial regeneration. At the same time, however, he avoided strictly racialized categories, even in his discussion of pelvic narrowness. Whereas Flores y Troncoso attributed small pelvises

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221 Ibid., 54.
222 Ibid., 22.
223 Trangay, *La maternidad consciente,* 44. "siempre que con ello se combatan o prevengan males sociales o males individuales que humanamente no tengan otra solución- tipo, esterilización por estrechez pélvica infranqueable."

to indigenous women, Trangay was likely ambiguous because he wished to extend the label of "unfit" to many *mestizos* (mixed-race Mexicans) in addition to indigenous groups. Nonetheless, Trangay certainly shared nineteenth century concerns about miscegenation, and he wrote: "Not long ago there lived a strong and pure race in Mexico" which, he reported, had "declined due to environmental factors, inadequate parenting, and racial mixture".[224] In his words, the health of the nation depended on "homes with children who were numerically, biologically, and culturally controlled".[225] Trangay's conflation of biology and culture was significant, because he assumed that "cultural pathologies" were predetermined and shared within social groups, much like biological traits inherited.

In his 88-page work, Trangay expanded on the rhetorical, moral and legal contours of his proposal for the enactment of an obligatory sterilization campaign in Mexico. Suggestively, however, he did not articulate a precise scientific argument for how eugenic sterilization would protect the nation from decay and improve the health of the future population. For example, Trangay could have discursively joined politicians in their campaign to eradicate congenital syphilis.

As an obstetrician by training, however, Trangay rationalized sterilizations with one of the major threads of medical research that preceded him, and he chose to highlight the dangers that "pelvic narrowness" posed to reproduction. It is also instructive to reconsider the middle clause of his sentence, which proclaimed that "no other humane

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[224] Ibid., 33.
[225] Ibid., 76.

solution" existed, apart from sterilization, for those women with "undisputable pelvic deficiency".[226] Trangay's word choice was perhaps disturbing, but it was consistent with eugenic thought.

Gustavo Trangay was not the only doctor in the 1930s that embraced Porfirian era concerns about pelvic measurements. In 1935, for example, Alfonso Mejia Schroeder wrote about the topic in his dissertation, *De la esterilidad femenina: su etiología* (*On feminine sterility: its etiology*). Schroeder wrote that "sick" women *("enfermas")* with "pelvic deficiencies" were essentially "incapable of healthy reproduction,"[227] and using the language of Social Darwinism, he also referred to "pelvic deficiency" as symptomatic of "recapitulation" and "infantilism".[228]

In 1934, leading obstetrician José Figueroa Ortíz published a large quantitative study on the subject, entitled *La estenosis del diametro bisisquiatico en Mexico* (*The bisisquiatico stenosis diameter in Mexico*). Ortíz based his study on 600 women that he observed during childbirth in the public hospital Maternidad Chapultepec, and his main conclusion was that "pelvic deficiency" was "definitively demonstrated in our country".[229] After outlining five types of "pelvic anomaly", Ortíz speculated that the "generally narrow" pelvis was the most common in Mexico. Shockingly, he asserted that

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[226] Ibid., 56.

[227] Alfonso Mejia Schroeder, *De la esterilidad femenina: su etiología,* (Mexico City: Imprenta Mundial, 1935), 25.

[228] Schroeder, *De la esterilidad,* 25. Recapitulation is the theory that organisms, in different stages of their development, go through phases in which they resemble distant ancestors. The theory has been disproven in biology.

[229] José Figueroa Ortíz, *La estenosis del diametro bisisquiatico en Mexico,* (Mexico City: 1934), 11. "*Bisisquiatico,"* appears in the text above in Spanish, because I have been unable to find its translation to English, 5.

42 percent of Mexican women suffered from pelvic narrowness, which he insisted was caused by "genetic and pathological conditions," but not *raquitismo*, a bone disease associated with poor nutrition and/or congenital syphilis.[230]

In 1936, Rufino Garcia Rodríguez published another influential work on the pelvis, named *Diagnóstico de las estrechez pélvica y la operación cesarea clásica* (*Diagnosing a narrow pelvis and the classic cesarean operation*).[231] In it, Rodríguez acknowledged that the diagnostic criteria for pelvic narrowness revealed several inconsistencies. More specifically, he stated that there were large discrepancies in the data, due to the fact that "neither the position of the patient, nor the points of reference, nor, in many cases, the instrument employed" were exactly "the same".[232]

Notwithstanding, Rodríguez insisted that it was "fitting to assume that all 42 percent of Mexican women with small pelvic measurements would experience difficulty during birth."[233] Thus, according to him, "surely one of the most precise criterion for cesarean sections is pelvic narrowness of any kind". [234] Yet, Rodríguez placed a caveat on his own claim when he wrote, "nonetheless, all of the data in respect to the diameters I just indicated are very necessarily *(forzosamente)* theoretical." "In reality" he explained, "it is a theoretical axis we measure".[235]

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230 Ortíz, *La estenosis del diametro*, 15.
231 Rufino Garcia Rodríguez, *Disgnostico de la estrechez pélvica y operacion cesarea clasica*, (Mexico City: n.p. 1936).
232 Rodríguez, *Disgnostico de la estrechez pélvica*, 19.
233 Ibid.,18
234 Ibid., 66.
235 Ibid., 35.

However "theoretical" the pelvic axis may have been did not seem to be of particular importance to Rodríguez. In a clear indication of somatic and socio-economic prejudice, he proposed that a "square body type" and "bad teeth" were indicators of a deficient pelvis, while Juan Antonio Torres Septién, writing in 1934, specified "short stature," a "poor moral attitude" and "poor integrity of bodily movements" as symptoms of the same.[236]

CONCLUSION

In June 1955, the Universidad Nacional Autónoma de México hosted the second Mexican Conference of Gynecology and Obstetrics in Mexico City, and those who organized the gathering decided to publish a book to distribute there. They assembled a collection in honor of Dr. Juan Duque de Estrada, who was the former head professor of the Obstetrical Clinic and Sara Rodríguez's doctor. The 1955 publication contained nine of Duque de Estrada's most influential studies on the "infantile pelvis," which he authored between 1897 and 1919.

Dr. Antonio Sordo Noriega, who helped to organize the 1955 forum, wrote a forward for the edition. In it, he explained the rationale behind the publication by designating Duque de Estrada as "one of the most distinguished professors that the ENP had ever seen". Noriega held Duque de Estrada's work on pelvimetry in high regard, and he wrote that his "studies about pelvic deformities were a testament to his astuteness as a scholar and scientist, and they fill us with wisdom for the present period". The volume as

[236] Rodríguez 50-51; Juan Antonio Torres Septién, *Un Nuevo Método de Pelvigraphia,* (Mexico City: n.p. 1934), 17.

a whole, Noriega asserted, "verified that in public patients (*el sector social*), Mexican women's pelvis presents some peculiar characteristics, and Juan Duque de Estrada was able to study the anomalies and defects that characterizes these women's inability to give birth".

Hence, doctors as late as 1955 apparently clutched to Porfirian conclusions about the Mexican pelvis. Noriega's reference to "public patients," was particularly striking because it echoed the mid-nineteenth century regulation that segregated public patients from private ones in *La Casa de Maternidad.* Apparently pelvimetry formed part of the conference agenda, because Noriega additionally expressed the hope that after reading Duque de Estrada's work, "the foreign gynecologists who have come to the conference will have a better point of reference when we mention Mexican pelvimetry (*pelviología*)".[237]

Questions of biology and "otherness" have been at the center of nation-state formation as well as racial and economic paradigms. For example: slave traders and slave owners claimed that Africans were "less human" and therefore indebted to the civilizing effects of slavery;[238] indigenous populations worldwide were supposedly too "savage" for assimilation and thus experienced genocide;[239] and politicians in the U.S. proposed that

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237 Antonio Sordo Noriega, *Estudios obstétricos,* 2-4.

238 Rebecca Scott, *Degrees of Freedom: Louisiana and Cuba After Slavery,* (Cambridge, Massachusetts: Harvard University Press, 2005).

239 Philippa Levine, "Colonialism, Anthropology, and Eugenics". in *Oxford Handbook of Global Eugenics.*

Mexican immigrants were ideal candidates for farm labor due to their short stature.[240]

This thesis has shown that the Mexican medical establishment attempted to prove the anatomical "otherness" of indigenous and racialized women, and also that they pursued modern techniques in order to discipline their ostensibly unruly bodies. Scientific claims about indigenous "otherness" were significant, because they proposed that biological deficiencies prevented women from producing competitive future citizens. Their central beliefs- that indigenous women's bodies defied evolutionary progress because they were infantile, backward, and exhibited retarded development- reflected notions that women and indigenous people were traditional carriers of culture as opposed to modern agents of change.[241]

As ethnic and gender inequalities remain a persistent problem in Mexico (and most of the world), it is important to consider the ways in which race and gender have been conceptualized in tandem and have acted in mutual reinforcement. Perceptions of "inferiority" have been at the core of both logics, which are more difficult to disprove when based in supposedly hard scientific fact, and when naturalizing these differences is important to state projects.

In *The Hour of Eugenics*, Nancy Stepan provided an excellent explanation of what she termed "the politics of scientific interpretation". The adoption of scientific theories, Stepan explained, is never done in "a purely empirical, logical, or evidential

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[240] Rudolfo Acuña, *Occupied America: A History of Chicanos* (New York: Pearson Longman, Sixth edition 2007).
[241] Philippa Levine, "Colonialism, Anthropology, and Eugenics". in *Oxford Handbook of Global Eugenics*.

manner," but is rather, "historical and political".[242] In addition, science is never created without relation to politics or ideology. It is both "given meaning and creates meaning in settings that are particularly social, economic, and political as well as intellectual".[243] These observations have certainly been true of overtly politicized projects such as eugenics, as well as the medico-scientific traditions that we have examined here.

The underlying themes of this thesis- elite discrimination against women and indigenous people- are not novel. This work, however, has identified yet another venue in which racial and gender prejudices together reared their heads. Nineteenth-century Porfirians first pathologized women's morality, then their biological functions. Finally, in the post-revolutionary period and with the international rise of eugenics and the reformist climate in Mexico, politicians and scientists pathologized poverty, rural families, and irresponsible mothers.

This thesis has demonstrated that the medical establishment saw "inferior" pelvic structure and small "soft parts" a pathological state. Gendered forms of positivism have been previously unexplored in Mexican historiography and in general, but it is an interesting topic for many reasons. Like phrenology, pelvimetry was a form of biometrics, but the bio-political problem under debate was female reproduction and not male criminality.

Both tenets of Porfirian positivism would factor into eugenic discourse in the post-revolutionary period. However, while a federal law passed in 1921 to legalize the

[242] Stepan, *The Hour of Eugenics,* 197.
[243] Ibid., 200.

forced sterilization of criminals in Mexico, there was more state reluctance regarding widespread female sterilization because, in light of post-war national depopulation, many politicians saw reproduction as Mexico's greatest resource. Nonetheless, the medical establishment drew upon decades of obstetrical research in order to rationalize their attempts to contain reproduction in those they saw as hereditarily unfit.

Díaz and *los científicos* sought to whiten the nation and convert Mexicans into economically productive citizens, a project that required heavy repression against the indigenous communities who supposedly hindered modernization efforts. In the post-revolutionary era the national endeavor professed intentions to forge a collective national identity under the umbrella of revolutionary ideology. However, post-revolutionary doctors became more willing to perform preemptive instead of corrective surgeries, which was ironic because the Porfiriato has long been seen as the more hereditarian of the two regimes. Of course, international eugenic reforms emboldened post-revolutionary doctors to perform the operations they saw fit, but the political, ideological and epistemological climate of the medical establishment may have influenced students even more than international reforms. No matter, it is safe to conclude that the post-revolutionary medical establishment altered very little of its racial discourse in order to appease the "*mestizo* myth".

In accordance, Robert Buffington has argued that criminological discourse served to exclude *los de abajo* from full citizenship rights throughout the Porfirian *and* post-revolutionary eras. Criminology formed just a small part of larger processes of marginalization. In all, Buffington contended that the Mexican state has failed to

"transform traditional colonial subjects into modern national citizens and, in the process, to forge a Mexican national identity".[244] These failures, Buffington proposed, have been neither "accidental nor circumstantial," but rather "fundamental to the construction of modern Mexico".[245] As Buffington has written, enormous questions have loomed concerning the failure (intentional or otherwise) of state efforts to truly integrate poor and indigenous people into the nation.

National identity, of course, is fabricated. Moreover, it is never constructed within the vacuum of the malleable- but not meaningless- borders of a nation state. Laura Briggs has stated that throughout the globe, medical attempts to construct a "national identity" or "identities" have been tied to two of the great modernist tropes: modern science, and a broad preoccupation with women, gender, and managing reproduction. In sum, Briggs has suggested that the underlying constant of political struggles is "the centrality of ideologies about women- victimized or dangerous- to provide the cause for policy intervention, and reproduction and sexuality to provide the core of a discourse of racial/national/class difference".[246]

Elites are not the only historical actors who can conceptualize and create "the nation," and although their mechanisms of exclusion have resulted in the perpetuation of inequalities, the ways that they have imagined the nation are certainly not the only ones worth considering. For example, there is little doubt that millions of Mexicans rose up during the Revolution *as Mexicans*, no matter what the nation's scientists and politicians

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[244] Buffington, *Criminal and Citizen,* 165.
[245] Ibid., 165.
[246] Briggs, *Reproducing Empire,* 191.

thought of them.

Yet, as Buffington has told us, elite ideology is significant because it has served to make invisible and to silence *los de abajo* throughout the world. Sterilization, Angela Davis has proposed, is one of the most definitive acts of marginalization, because it carries the connotation that some human life, if worth living at all, does not merit the shadow of a future generation.[247] In a similar vein, Buffington theorized that in Mexico, "for criminologists and increasingly also for anthropologists, Indianness was a tragedy; it was also a crime".[248] For the medical establishment, then, Indianness (and even, at select times, *mestizo*-ness) was an obstacle to worthwhile reproduction, but it was a problem whose swift remedy could be found within clinic walls.

[247] Angela Davis, *Women, Race and Class,* (New York: First Vintage Books, 1981), 215-221.
[248] Buffington, 165.

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